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BLANCA WILDLIFE HABITAT MANAGEMENT PLAN

CO-05 WHA-2

BLANCA WILDLIFE HABITAT AREA

CO-05WHA-2

Revised by;
Mark Strong

May, 1977

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This Habitat Management Plan (HMP) was prepared by the Bureau of Land Management and reviewed by the Colorado Division of Wildlife. This document is a revision of the original HMP, produced in 1966 and approved in 1973.

The Blanca HMP is a dynamic document which will be further updated and revised as new management direction and information become available. The plan serves to prescribe land management and related species population management guidance for the mutual benefit of wildlife and other resources and their uses. This plan is one of the first comprehensive HMP's directed at waterfowl habitat improvement to be completed by the BLM. It is anticipated that the Blanca HMP will be fully implemented by fiscal year 1979.

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BLANCA WILDLIFE HABITAT AREA

HABITAT MANAGEMENT PLAN

C-5 WHA T-1

A. INTRODUCTION

1. Description and History of Wildlife Habitat Area

The Blanca Wildlife Habitat Area is located in the San Luis Valley of southcentral Colorado, about 10 miles northeast of Alamosa (Figure 1). The area encompasses 5,390 acres of Public Land within the BLM's Blanca Planning Unit, San Luis Resource Area, Canon City District.

Wildlife habitat planning began for this area during the early 1960's and a pilot project of three artesian wells and water control dikes was constructed in 1966. Two more wells were drilled in 1968 and dikes were built to control this water in 1970

The original Habitat Management Plan (HMP) was written in 1968, but the project did not receive final approval until 1973. The first project biologist was assigned in 1972 to revise and upgrade the HMP to current standards. Funding was started for full implementation in F Y '74. All appropriations to date have been through BLM's normal wildlife program budget.

This HMP was originally conceived, and is now being implemented, because of the continuing loss of waterfowl habitat in the San Luis Valley and throughout the North American Continent. The San Luis Valley has been described as the southern-most major waterfowl

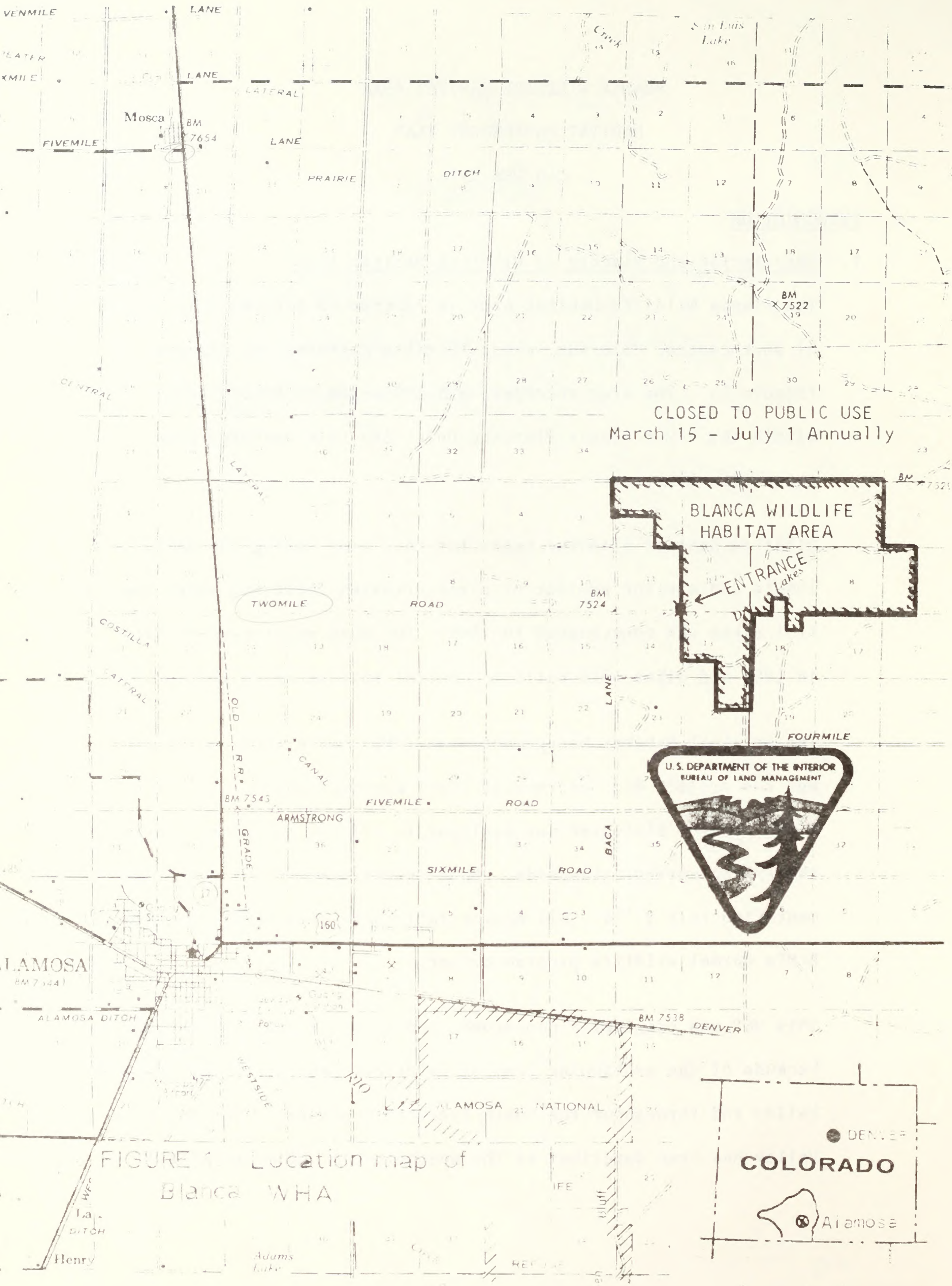


FIGURE 1. Location map of Blanca WHA

production area in the Central Flyway, but the total nesting habitat has decreased considerably since 1900 because of extensive agricultural development and a decrease in the level of the water table.

Habitat development at the Blanca WHA has been primarily a BLM funded program, but the HMP is a cooperative effort between BLM, Colorado Division of Wildlife and the U.S. Fish and Wildlife Service. The Colorado Division of Wildlife has management authority for all wildlife in the State and has enthusiastically cooperated in and approved this project. The Fish and Wildlife Service has provided advice on habitat development procedures and has conducted a preseason waterfowl banding program at the area.

a. Physical Environment. The area is within the "closed basin sump" and is comprised of numerous dry lake playas, partially stabilized dunes, and dry basins with sandy hummocks. There is no significant surface drainage from the area. Topography is rolling with total relief seldom exceeding twenty feet. Elevations range from 7,505 feet to 7,530 feet above sea level.

Temperatures vary from a high mean of 86°F. to a low mean of minus 29°F. The climate is generally cold with about one half the days each year falling to 16° or less during the night. Only 107 frost free days occur each year on the average. Winds are regularly strong (20-35 mph) from the southwest in the spring, but they are light the remainder of the year. Dust storms and soil movement by wind are normal during the windy season.

The following long-term averages were collected by the U.S.

Weather Bureau at the Alamosa Airport.

Month	Average Temperature	Average Precipitation
January	17.4	.26
February	23.5	.17
March	32.1	.26
April	41.8	.69
May	50.8	.73
June	60.0	.49
July	64.9	1.07
August	63.0	.98
September	55.7	.77
October	44.4	.60
November	29.5	.29
December	19.2	.25

Annual average temperature = 52.9°F

Annual average precipitation = 6.56"

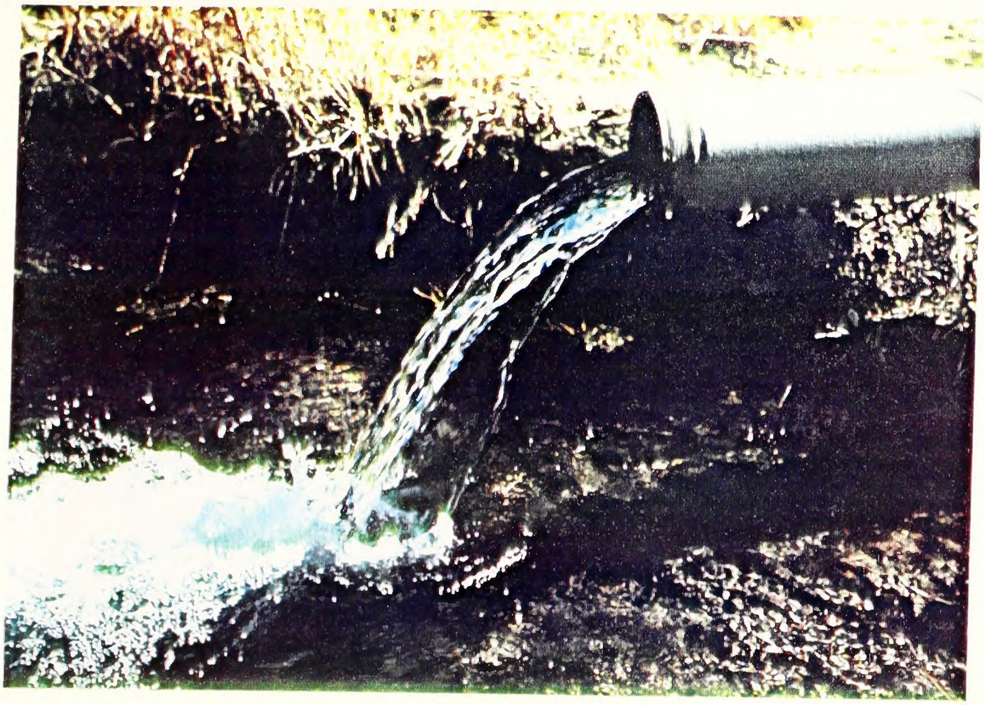
Mean annual pan evaporation rates at the Alamosa Weather Bureau Station are 56.3 inches. Pan evaporation is a good index of annual water needs in the Blanca WHA marshes. There is little percolation loss due to impervious clay layers in the soil and evapotranspiration from a marsh is similar to pan evaporation since the decreased water surface is offset by plant transpiration.

Soils vary from well drained wind modified alluvial sediments of sandy texture to shaley heavy clay and clay loam which is poorly drained with high exchangeable sodium. They are classified as the Hooper-Corlett association. Soil pH ranges from 8.5 to 10.5 and organic matter content is low.

Erosion caused by runoff is minimized due to the well drained sand dunes and upland areas. Concentrations of water with high velocities do not occur and movement between low areas seldom occurs.

The entire area is underlain with ground water at various depths, the uppermost often within a foot of the surface in lower basins. The area is also underlain with impervious clay layers at various depths, the uppermost sometimes on the surface. Layers of impervious blue clay at about 100' depth and below create artesian pressure in the deeper aquifers. Fifteen wells have tapped the artesian aquifer to provide the existing water supply for waterfowl habitat development. Approximately 470 acres of dry land have been converted to wetlands (marsh, pond or wet meadows).

b. *Vegetation*. Greasewood (*Sarcobatus vermiculatus*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and four-wing saltbrush (*Atriplex canescens*) are the major shrubs which comprise the general aspect of the area. The understory generally consists of salt grass (*Distichlis stricta*), western wheatgrass (*Agropyron smithii*), sandhill muhly (*Muhlenbergia pungens*), alkali sacaton (*Sporobolus airoides*), Indian ricegrass (*Oryzopsis hymenoides*), blue grama (*Bouteloua gracilis*), fringed sage



Artesian Well

at the Blanca Wildlife Habitat Area

(Artemisia frigida), and various annual forbs. Plant density is generally low (10-15 percent ground cover) in these dry upland areas.

Blunt spikerush (Eleocharis obtusa), black rush (Juncus balticus), and sedges (Carex spp.) occur in wet meadows where surface or subirrigation exists from the water table or flowing wells. Plant density is generally high (65-70 percent) in irrigated meadows.

Marsh vegetation includes emergents such as softstem bullrush

Native Vegetation

at the Blanca WHA Before Development

(Scirpus validas), cattail (Typha latifolia), alkali bullrush (Scirpus paludosus), and common threesquare (Scirpus americanus). Important submergents include Sago pondweed (Potomogeton pectinatus), longleaf pondweed (Potomogeton fruitans), and yellow water buttercup (Ranunculus flabellaris). Blooms of colonial ball algae (Nostoc spp.) and filamentous green algae (Phytum Chlorophyta) are common during spring and summer in the marshes.

Several hundred trees have been planted on the edges of the

marshes. These include Russian olive (about 2000), native plum (200) and shrubby caragana (350). Willows and cottonwoods have also been introduced by natural means in a few places.

2. Wildlife Status.

a. Populations. The wetland habitat provided at the Blanca WHA is becoming increasingly important for nesting and migrating waterfowl, shorebirds and wading birds. Other common game animals are the desert cottontail and mourning dove. Common non-game mammals include the coyote, muskrat, white-tailed jackrabbit, least chipmunk and Ord's kangaroo rat. The golden eagle, marsh hawk, Brewer's sparrow, horned lark, red-winged blackbird, loggerhead shrike, tree swallow and black-billed magpie are important non-game birds.

Common reptiles and amphibians include the tiger salamander, western toad, leopard frog and common garter snake. Rainbow trout and channel catfish have been stocked in several of the impoundments and fathead minnows are present in most of the fresh water areas.

A total list of species known or expected to occur in the WHA is included in Appendix 1. Most will not receive management attention at this time; but the following species or groups, listed by priority for management, are considered sufficiently important for consideration.

1.) Ducks and geese. Important nesting species are the Canada goose, mallard, gadwall, pintail, green-winged teal, blue-winged teal and cinammon teal. Shovelers, redheads, lesser scaup and buffleheads also contribute substantially to peak spring migration populations. Waterfowl populations have increased to about 2,000 during the peak of the 1977 spring migration; and an estimated 200 breeding pairs of ducks produced 60 broods or 300 ducklings in 1976. Goose production was estimated at 6 broods or 22 goslings from a total of eight nesting attempts in 1976. Waterfowl population and production trends for the past five years are shown in Table 1.

Table 1. Waterfowl population and production trends* from 1972 to 1976, Blanca Wildlife Habitat Area.

	1972	1973	1974	1975	1976	est 1982
Peak spring population	250	550	850	1150	1350	4000
Breeding pairs - ducks	40	100	125	165	206	
No. Broods produced	6	23	26	50	60	
No. Ducklings produced	30	115	130	250	300	1000
Breeding pairs geese	0	2	5	10	12	
Goose nests	0	1	3	6	8	67
Goose eggs laid	0	5	15	28	42	
Goose eggs hatched	0	3	14	19	23	
Goslings produced - est.	0	3	13	19	22	280

*Population and breeding pair data are from actual counts and production data are estimates based on nest searches and weekly brood chronology counts.

Table 2 shows the species composition of the waterfowl breeding population and their estimated production at the Blanca WHA in 1976. Mallards comprised nearly one-third of both the breeding population (64 pairs or 31 percent) and production (95 ducklings or 32 percent). Other important nesting species in decreasing order of ducklings produced were pintails (70 ducklings), green-winged teal (40), gadwalls (35), and blue-winged teal and cinnamon teal in combination (30).

Table 2. Estimated waterfowl production, Blanca Wildlife Habitat Area, 1976.

Species	Breeding Pairs No.	Breeding Pairs Percent	Broods No.	Broods Percent	Young Produced No.	Young Produced Percent
Mallard	64	31	19	32	95	32
Blue-winged teal) Cinnamon teal)	39	19	6	10	30	10
Shoveler	37	18	3	5	15	5
Pintail	27	13	14	23	70	23
Gadwall	20	10	7	12	35	12
Green-winged teal	15	7	8	13	40	13
American Widgeon	4	2	3	5	15	5
Total Ducks	206	100	60	100	300	100
Canada goose	12	-	6	-	22	-
Total Waterfowl	218	-	66	-	322	-

Precise estimates of waterfowl harvest at the Blanca WHA are not available but it is estimated at 150-300 ducks for the 1976-77 season. The long-term average annual waterfowl harvest for the entire San Luis Valley is about 20,000.

Peak waterfowl populations occur at the area during the spring migration from March 15 to May 15. The nesting season runs from April 1 to May 15 for Canada Geese, and from May 15 to July 15 for ducks in the San Luis Valley.

Waterfowl habitat management in the San Luis Valley is designed to attain the following habitat conditions which are considered optimum locally.

a.) Water - Permanent ponds with a diversity of size. Numerous smaller ponds provide the necessary territorial spacing during nesting, but a few larger ponds are important for brood rearing, molting and migrations.

b.) Cover - Tall dense wet meadows mixed with greasewood near water and islands in the marsh provide optimum nesting cover. Interspersed emergents and dense shoreline vegetation are important for brood rearing and molting.

c.) Food - Food is not usually a limiting factor, except in the winter, as all fresh water ponds have adequate aquatic plants and invertebrates. Grain fields are important for high-energy food in the winter.

2.) Shorebirds and other water birds. The developed wetlands provide important nesting habitat for the American avocet, killdeer, Wilson's phalaerope, spotted sandpiper and common snipe. The avocet and killdeer nest on bare islands or shoreline and the phalaerope, sandpiper and snipe prefer wet meadows.

Avocets Feeding at the Blanca WHA

The insect and amphibian life available around the marsh and shoreline are attractive to migrants such as the willet, greater yellowlegs, Western sandpiper, long-billed dowitcher, snowy egret, black-crowned night heron, great blue heron, eared grebe and pied-billed grebe Coots also nest in the emergent vegetation in small numbers each year.

Management methods designed for waterfowl are also

generally beneficial for shorebirds and waterbirds.

3.) Fish. There are presently eleven ponds totaling 73 surface acres which support game fish; seven with rainbow trout, two with rainbows and channel catfish, and two with channel catfish. Fathead minnows are present in most of the fresh water ponds. There are also three new ponds which will be stocked in 1977 and three other existing ponds which will be stocked as soon as adequate water supplies are obtained by improving the wells.

Typical Fishpond at the Blanca WHA

Trout were first stocked in two ponds in 1971, and stocking has continued each year according to the following schedule.

1972 - 800 trout in 2 ponds

1973 - 800 trout in 2 ponds

1974 - 1,200 trout in 3 ponds

1975 - 12,000 trout and 1,000 channel catfish in 9 ponds

1976 - 11,600 trout in 9 ponds

An estimated 2,000 trout were caught from ponds at the WHA in 1976, and fishing pressure is picking up rapidly as new ponds become fishable.

4.) Endangered Species. No threatened or endangered species have been known to make significant use of the area to date. Peregrine falcons (*Falco peregrinus anatum*) have been observed hunting at the area on rare occasions during migrations, but this use is not expected to increase.

The endangered whooping crane (*Grus americana*) is present seasonally in the San Luis Valley as a result of an experiment by the U.S. Fish and Wildlife Service. Eggs taken from the one remaining whooping crane nesting area in Canada are placed under greater sandhill crane foster parents at Gray's Lake National Wildlife Refuge in Idaho in an attempt to establish a separate flock of whooping cranes. The sandhill crane foster parents are part of a large flock that uses the San Luis Valley as an important stop during their migrations. The whooping cranes could be attracted to the marshes, meadows and grain fields provided by the Blanca WHA if and when their flock becomes permanently established.

Future plans are to establish a population of Rio Grande cutthroat trout (Salmo clarki virginalis) in one of the fish ponds at the Blanca WHA. The advantages of this population compared to a similar one in a hatchery are that they would retain a wild gene pool since they would be forced to forage for themselves on natural foods rather than being fed. These fish would also provide a potential source of brood stock for eggs.

5.) Other Species. Other species which will receive management attention include the mourning dove, cottontail rabbit, barn swallow, tree swallow and violet-green swallow. Mourning doves nest in low to moderate densities in the undeveloped brush and grassland and the improving habitat is allowing small increases in the population. Cottontails are also increasing due to improved food and cover.

No swallows were known to nest in the WHA prior to habitat improvement projects, but tree swallows are now nesting in small but increasing numbers. Both tree and violet-green swallows are attracted to small bird nesting boxes which have been erected near the ponds. Twelve of fourteen bird boxes had successful tree swallow nests in 1976.

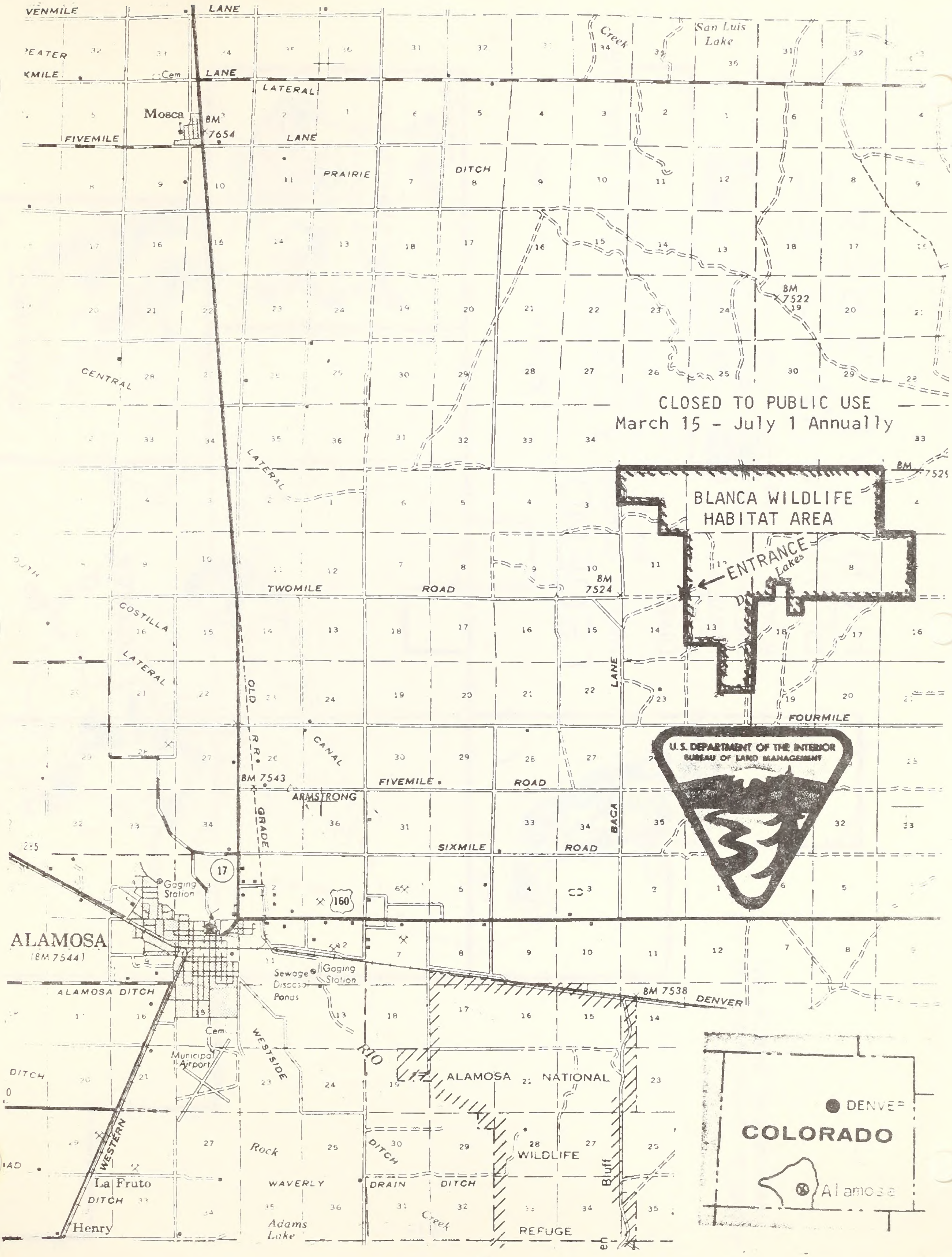
Pest species requiring management attention are the white-tailed jackrabbit, muskrat, striped skunk, raccoon, long-tailed weasel, coyote and black-billed magpie. Jackrabbits cause serious depredation problems on immature grain plants and trees, often killing them. Muskrats burrow holes in the dikes which require maintenance to prevent breaching. Raccoons, weasels, coyotes and magpies combine to create a serious egg predation problem on nesting waterfowl. Nest losses of over 50 percent are attributable to predation.

There is presently no organized animal damage control program since poisoning is illegal and other means are relatively ineffective. Management is directed more towards providing better cover than destroying predators. A few muskrats and coyotes are trapped each year by the public.

b. Habitat Conditions. Present wetland habitat type acreages are compiled in Table 3 and shown in Figure 2. The habitat shown is the full potential or climax vegetation of the areas which are presently watered. Figure 2 also show the existing physical improvements which have been constructed to produce the habitat. The undeveloped areas are primarily greasewood shrubland with some salt grass flats and some alkali flat wasteland.

Table 3. Existing wetland habitat types, Blanca Wildlife Area.

System	Wells		Fishponds		Water	Wet Meadow	Total Wetland	Barley	Undeveloped	Total
	No.	Acre Ft/Yr	No.	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Axel	4	400	3	12	118	29	147	0	577	724
S. Mallard	4	536	6	64	95	68	163	0	481	644
N. Mallard	3	320	3	15	75	13	88	0	556	644
Honker	4	344	4	16	58	15	73	8	3297	3378
Total	15	1600	16	107	346	125	471	8	4911	5390


CLOSED TO PUBLIC USE
March 15 - July 1 Annually

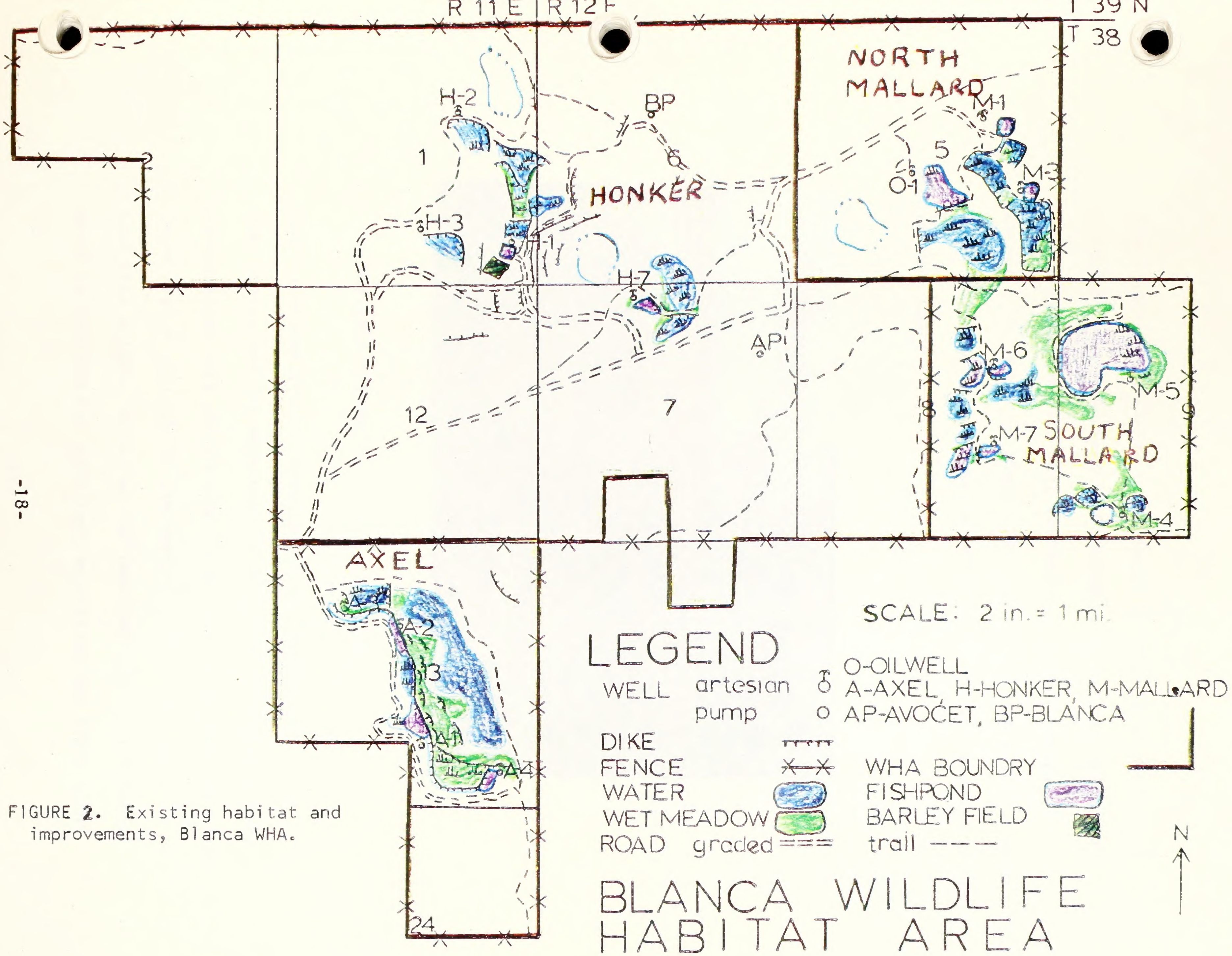
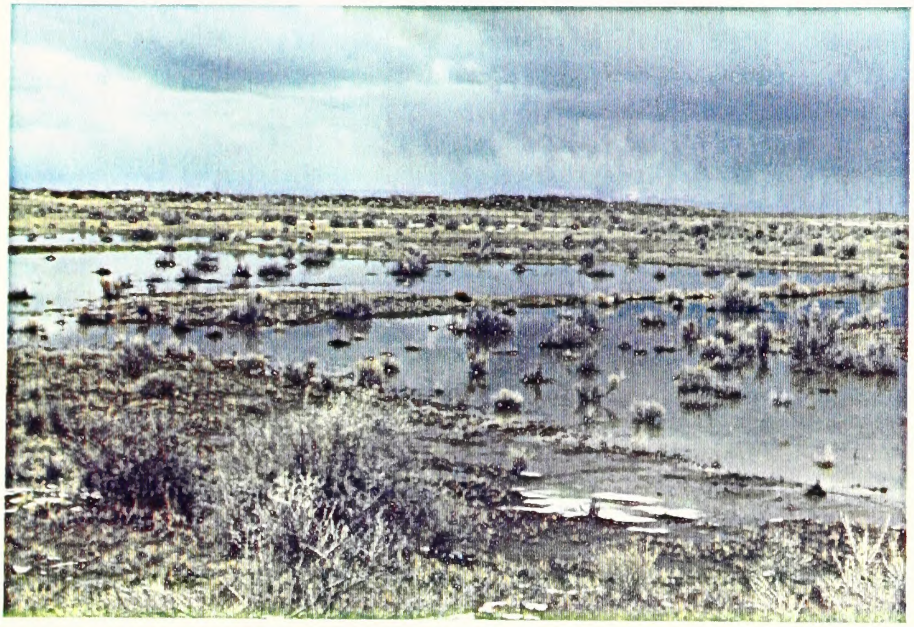


FIGURE 2. Existing habitat and improvements, Blanca WHA.

There are presently about 346 acres of water in various successional stages between newly flooded greasewood and nearly mature marshland with well developed stands of emergent vegetation. The total of about 470 acres of wetland also includes about 125 acres of wet meadow, also in early successional stages in most cases.



Recently Flooded Wetlands, Blanca WHA

Most waterfowl habitat development and management in the San Luis Valley has the objective of achieving climax marshland interspersed with climax black rush meadows for nesting cover. Therefore, a majority of the wetland habitat available is in less than optimum condition for waterfowl due to immaturity which is reflected as preclimax vegetation and lower plant

densities.

Mature Marsh, Blanca WHA

The successional stages of saltgrass (Distichlis stricta)-foxtail (Hordeum jubatum)-blunt spikerush (Eleocharis obtusa)-black rush (Juncus balticus) require a minimum of 3 to 5 years to develop under optimum water and growth conditions, and 7 to 8 years would not be abnormal. Based on this time lag, optimum conditions will not be expected on existing habitat until about 1985, and any future development would not be fully productive until nearly 10 years after construction.

Duck nesting is increasing in the wet meadows as the vegetation changes, but many ducks are presently nesting wherever cover can be found. Many seem to prefer the interior of a clump of greasewood. Much of the nesting also occurs on islands which

have been constructed in the fresh water ponds.

Mature Wet Meadow, Blanca WHA

Duck Nest in Greasewood, Blanca WHA

There are presently more than sufficient nesting sites for Canada Geese, but sites would become scarce if the population increases to projected levels. Six floating nesting structures and six nesting platforms are available in addition to numerous islands.

Canada Goose Incubating

in Floating Platform, Blanca WHA

The available habitat is only fair for diving duck and wading bird nesting, but both groups are attracted to the abundant food during migrations. These birds require dense stands of emergent vegetation such as soft stem bullrush to build their floating nest. These stands will exist in time, but this will also require 8-10 years.

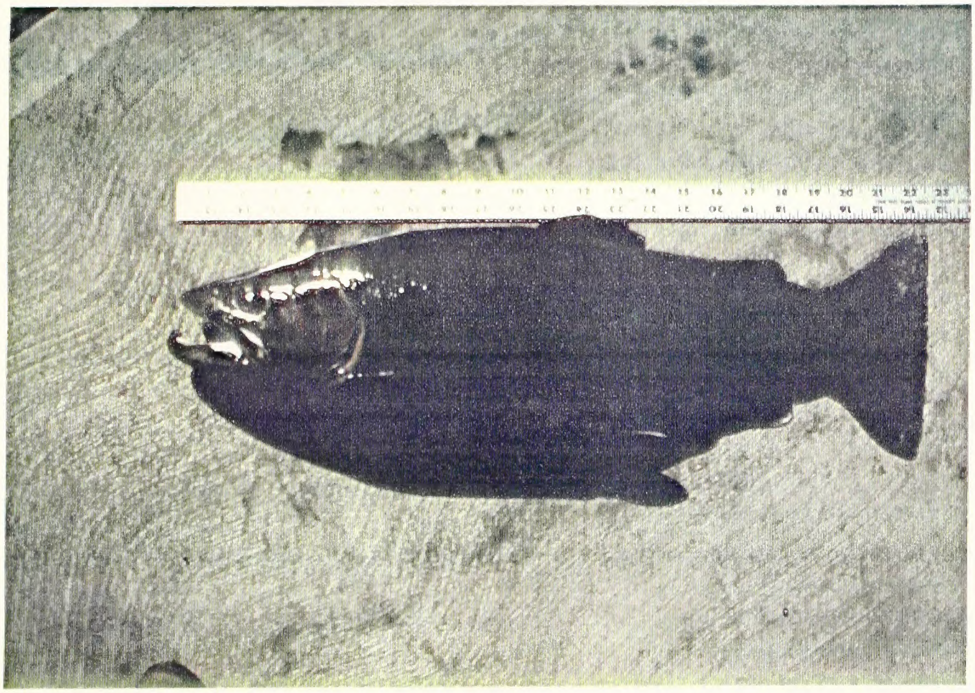
Habitat for some shorebirds such as the avocet and killdeer is near optimum now since they prefer bare shores and islands for feeding and nesting. Nesting habitat for the Wilson's phalaerope, spotted sandpiper and common snipe is fair, but improving since they require wet meadows.

The existing habitat is also only fair for sandhill cranes and whooping cranes. Both prefer extensive marshlands, and grain fields are necessary for food during those migratory periods when their natural animal prey is inadequate.

Habitat conditions are near optimum for rainbow trout at this time. These fish thrive on the warm artesian water (60°F at the well year around) and the abundant aquatic invertebrate fauna that it produces. The freshwater shrimp, *Hyalella azteca*, provides an abundant supply of high protein food for the trout. Rainbow trout planted as fingerlings grew to 20 inches and 3½ lbs. in two years from the first stocking, and more recently to 15 inches and 2½ lbs. in 1½ years in the ponds newly stocked in 1975.

However, some problems are anticipated in the future due to overgrowth of aquatic plants. Yellow water buttercup (*Ranunculus flabellaris*), sago pondweed (*Potomogeton pectinatus*) and several species of algae are beginning to choke the fishponds, especially during the warmer months. This might eventually require some aquatic plant control to optimize

fish production and fishing. However, many aquatic plants, especially sago pondweed, are excellent waterfowl food and fish management may have to be sacrificed to provide optimum waterfowl habitat.



Six Pound Trout Caught at Blanca WHA

The two original fish ponds (Mallard 1 and Honker 1), (see Figure 2,) have had partial trout die-offs each summer except 1976 since they were started. This mortality occurred in the warm summer months when the ponds were drawn down for extended periods to increase water flow to waterfowl brooding areas.

It is theorized that these die-offs were due to a shift in pH to greater than 10 which is lethal to rainbows. This shift in pH is thought to be due to the high pH of the well water (avg. = 8.8), low pond volume resulting from drawdown, and the

removal of carbon dioxide from carbonate and bicarbonate ions because of high plant photosynthesis levels which drives the pH upward.

The solution has been to keep the ponds full during warm weather or to immediately begin filling the reservoirs after drawdown if water is needed in the marshes. No mortality occurred during the summer of 1976 using these methods.

Habitat for small game such as mourning doves and cottontails is good at present and improving due to the habitat developments which are providing more and better food, water, and cover. The same is true for most non-game animals. The developments, especially the water and riparian vegetation, are increasing the attraction of the area to a greater variety of non-game birds during migrations. Nesting habitat is still inadequate for hole-nesting birds, but this will improve as more nest boxes are constructed. Habitat for pest species is also increasing and improving in proportion to the amount of development.

c. Habitat Potential and Problems. The potential of the area for increased production of wildlife, especially waterfowl, is limited primarily by the availability of water in the proper quantity and quality. There is essentially no natural water at the area since rainfall averages less than 7 inches annually, and the average pan evaporation is about 4.7 feet per year.

Assuming that annual pan evaporation occurs at a similar rate to annual evapo-transpiration from a marsh, an average of 4.7 acre-feet of water or nearly 3 gallons/min. continuous flow yearlong (or equivalent) is needed to maintain one acre of marshland, and lesser amounts for wet meadow.

The original HMP proposed a development of 2,800 acres of wet meadow and marshland with an annual water supply of 9,200 acre-feet totally from artesian wells. Problems arising from state-federal water rights conflicts have made a development of this magnitude highly unlikely with artesian water only, but a limited amount of additional artesian water may be feasible if BLM drills the wells.

Additional water is available from shallow pump wells, but the costs necessary to achieve full development (9,200 acre-feet/year) through this method would be prohibitive. Two pump wells which have been drilled have also yielded inadequate flows (120 and 60 gpm) and water quality (1250 ppm dissolved solids minimum) for economical and productive habitat development even on a limited supplemental basis. However, it should be possible to salvage these two wells by deepening them to 150 ft.

Another potential source of water would be to obtain part or all of the remaining water needs as mitigation for the U.S. Bureau of Reclamation's proposed Closed Basin Project. This project could have a serious detrimental impact on wildlife habitat including portions of the Blanca Wildlife Habitat Area, if constructed as planned; and mitigation could be provided in the form of increased water supply to the area. The maximum water which would likely be available to Blanca would be about 1000 acre-feet per year, but it is conceivable that up to 3,300 acre-feet would ultimately be available.

Present and potential management problems which must be addressed in the HMP include the following:

1.) Insufficient water for optimum development. Studies completed by the U.S. Geological Survey indicate that the confined (artesian) ground water aquifers in the "Closed Basin" portion of the San Luis Valley are tributary to the Conejos River and therefore the Rio Grande through several large springs. The State Engineer of the Colorado Division of Water Resources has denied all applications for new artesian wells on the basis that all water rights on the Rio Grande are fully obligated. Water is available from the unconfined aquifer, but this must be pumped to the surface making it expensive.

2.) Public use of the WHA is significantly reducing its potential for use by waterfowl and other mobile wildlife. This problem has been mostly solved during the waterfowl nesting season by closing the area to public use from March 15 to July 1 each year.

    However, it may be necessary to extend the nesting season closure to July 15 because of significant number of duck broods are hatched between July 1 and July 15 each year, and concentrated public use could cause nest desertions during this period. Other similar waterfowl management areas in the San Luis Valley such as the Colorado Division of Wildlife's Rio Grande Management Area are closed until July 15th each year.

Public use is also reducing waterfowl use during the remainder of the year. Increasing use by recreationists, mostly fishermen (and hunters during season), have reduced fall and winter waterfowl populations to few or none and hunting quality has diminished proportionately. This problem is primarily due to the network of roads available and the relative ease with which users can drive to each and every pond with regularity. The planned system of roads and parking lots should solve this problem for at least a few years, but it may eventually be necessary to annually close a portion of the WHA.

Other public use problems include ORV travel which causes destruction of vegetation, erosion of dikes and unnecessary disturbance of wildlife; and vandalism such as fences and gates being cut and signs being destroyed or stolen. These actions are against existing regulations, and they can only be minimized by proper enforcement of the regulations.

Motorcycle Tracks Down the Face
of a Dike at the Blanca WHA

3.) Optimum fisheries management may conflict with optimum waterfowl management in the future. The fish ponds must be drawn down occasionally to provide water to prevent drying up marshlands, and aquatic plants which are desireable waterfowl food are choking the fishponds and making fishing difficult. This conflict has only occurred at two fishponds totaling two surface acres in the past, and the extent of any potential conflict is unforseeable. The two ponds concerned must be drawn down several times each summer to provide water for the marsh. At low water each pond has a depth of about three feet.

4.) Archaeological resources must be inventoried or excavated

prior to or preserved during all earth disturbing activities.

Archaeological Excavation

at the Blanca WHA

5.) Committments have been made to resume livestock grazing in the near future. Present privileges are being carried as non-use, but grazing would be detrimental to waterfowl nesting unless strictly controlled. An allotment management plan has been written based on wildlife objectives, but it is not yet approved or implemented.

6.) Excessive populations of nest predators and muskrats are reducing the productivity of waterfowl and other desirable species.

7.) The Closed Basin Project, if authorized and implemented as designed, could have serious adverse impacts on the WHA's productivity by depleting water supplies and or physically

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

destroying habitat.

8.) There is minor local opposition to development of the WHA because of the alleged "waste" of water for wildlife. These people feel that water should only be used for agriculture, industry or domestic use.

9.) Subdivisions of land near the WHA could put undue human pressures on its wildlife if they are heavily occupied. There are no apparent problems at present.

B. MANAGEMENT OBJECTIVES

General. Protect and enhance the total wildlife resource with emphasis on waterfowl and provide the maximum allowable wildlife associated recreation for the general public consistent with maximum wildlife productivity.

Specific. (To be achieved within 10 years of completion of development.) The first figure is based on the level of development most likely to occur with 2,700 acre-feet of water per year. The figure in parentheses is based on full development with 6,000 acre-feet of water per year if it is obtained.

1. Develop 725 (1500) acres of wetland habitat capable of producing 4000 (7500) ducks and 200 (315) Canada geese annually.
2. Provide habitat capable of sustaining 600,000 (1,000,000) waterfowl use-days and 100,000 (150,000) shorebird and wading bird use-days annually.
3. Provide 140 (140) A. of pond habitat capable of supporting a harvest of 10,000 trout or other game fish annually.
4. Provide pond habitat capable of supporting a minimum of 250 (250) adult Rio Grande cutthroat trout as a natural population that would maintain its wild genetic stock but be incapable of natural reproduction due to lack of stream habitat.
5. Provide suitable habitat to attract migrant peregrine falcons, whooping cranes and greater sandhill cranes for resting and feeding.
6. Provide habitat capable of producing 500 (500) cottontails and

500 (500) mourning doves annually.

7. Develop and maintain 725 (1500) acres of wetland habitat to provide key nesting habitat for 5 shorebird species and 3 wading bird species.
8. Develop and maintain 725 (1500) acres of wetland habitat, 14 (50) acres of barley fields and 4650 (3840) acres of upland habitat to enhance the area for the 231 species of vertebrate wildlife known to occur; and support:
    - 2,000 (3,750) on-site waterfowl hunter days/year
    - 2,000 (3,750) off-site waterfowl hunter days/year
    - 1,000 (1,000) small game and non-game hunter days/year
    - 5,000 (5,000) fisherman days/year
    - 5,000 (7,500) non-consumptive visitor days/year
    - 15,000 (21,000) total recreation visitor days/year

C. CONSTRAINTS

The primary constraints on development and management of the Blanca WHA for wildlife are those associated with the archaeological resources of the area and with obtaining water. The American Antiquities Act (34 Stat.L.225) and specific MFP decisions require the protection of the sites and artifacts present in the WHA. Refer to Section IV, coordination with other programs, for details. The water supply problem is discussed in the habitat potential and problems section and again under management methods.

The BLM's multiple use Management Framework Plan (MFP) was completed on the Blanca Planning Unit in 1975, and the decision was made to manage the Blanca Wildlife Habitat Area primarily for wildlife habitat development and protection.

Other pertinent MFP decisions were to:

1. Classify and withdraw the Blanca WHA from entry under general Mining and Agricultural Land Laws. This withdrawal became final when it was approved by the Department of Interior and published in the Federal Register on June 23, 1975.
2. Develop a system for visitor management including roads, parking lots and sanitation and interpretive facilities. Approved restrictions on this public use are to close the WHA to all public use from March 15 to July 1 annually and to prohibit off-road vehicular travel. The road, parking lots and sanitation facilities have been funded for FY '77, and are currently being designed for construction during the summer of 1977.

3. Develop a livestock grazing Allotment Management Plan based solely on wildlife management objectives.
4. Protect the archaeological values remaining on the area as much as possible consistent with the primary wildlife management objectives and continued public use. The Dry Lakes Area, a portion of which is under development as the Blanca WHA, has been identified as containing rich archaeological values.
5. Develop the geothermal resource in the San Luis Resource Area through competitive and non-competitive leasing.

D. PLANNED ACTIONS

1. Wildlife Management.

The Colorado Division of Wildlife is responsible for wildlife population management at the Blanca Wildlife Habitat Area, but most programs such as hunting seasons are normally set for the entire state or the San Luis Valley rather than small management areas. Specific programs to date have been fish stocking each year, and a closure of the area to fishing coinciding with the spring public use closure. Both programs were cooperatively undertaken at the reouest of BLM. Good cooperative relations will be continued with the Colorado Division of Wildlife.

2. Habitat Management and Development.

The potential habitat development and projected wildlife productivity are summarized in Table 4 for the following alternative development plans:

Alternative I. Maintain the existing habitat (1/1/77) with the existing water supply of about 1,600 acre feet of artesian water annually.

Alternative II. Obtain and develop an additional 1,100 acre-feet of water annually by drilling nine new artesian wells (700 acre-feet) and improving the two existing pump wells (400 acre-feet) with BLM owned or leased drill rig. Total water = 2,700 acre-feet/year.

Alternative III. Obtain and develop an additional 2,100 acre-feet of water annually; 1,100 as in Alternative II above and

1,000 more as mitigation from the Closed Basin Project. Total water = 3,700 acre-feet/year.

Alternative IV. Obtain and develop an additional 4,000 acre-feet of water annually; 2,100 as in Alternative III above with the final 2,300 acre-feet to come from the Closed Basin Project also. This alternative would be considered "full development" for the area. Total water = 6,000 acre-feet/year.

These alternatives are based primarily on the quantity of water available and the extent of the development which is possible.

Table 4. Potential wildlife habitat and productivity. Blanca Wildlife Habitat Area alternative development plans.

Alternatives/ Potentials	I Existing Development (1/1/77)	II Partial Development No Cl.Basin	III Partial Development Closed Basin	IV Full Development Closed Basin
Acre-ft water/year	1600	2700	3700	6000
Acres wetland	470	725	950	1500
Fishponds: no.-total acres	14-93	24-140	24-140	24-140
Annual duck production-no.	2500	4000	5000	7500
Annual goose production-no.	125	200	250	375
Annual fish production-lbs.	9000	13,500	13,500	13,500

The wetland habitat shown would include about 70 percent permanent pond or marshland and about 30 percent wet meadow or intermittent marsh.

The fish productivity projected in Table 4 is based on known production capabilities at the WHA. Fish are stocked at the rate of 200 fingerlings/surface acre/year, and are known to gain well over one pound a year. The projected productivity of 100 pounds/surface acre/year is based on a minimum survival of 30 percent or 65 fish/acre each of which gain over one pound/year.

The waterfowl productivity projections in Table 4 are based on production data from other management areas in the San Luis Valley. The area has the potential to support large numbers of waterfowl during migrations, and to become one of the most important production areas for dabbling ducks and Canada geese in the Valley.

Alternative I, to maintain the existing development with existing water supplies, would be a worthwhile development which would produce an estimated 2,000 ducks and 125 geese a year under optimum conditions. However, the developed habitat would not be optimally distributed throughout the WHA to reach maximum productivity under this alternative. Large tracts would remain undeveloped which would diminish the attractiveness of the developed areas below their potential.

Alternative II, to obtain and develop about 2,700 acre-feet of water annually would be the minimum development that could reach the optimum potential productivity per unit area of development. Habitat development would be distributed throughout the WHA, though a much higher density of development could still be reached.

Habitat throughout the entire WHA would be within the maximum distance from water for nesting, and some nesting would be expected in all habitat types in all locations including dry uplands. However, the wet meadows, marsh edges and islands in the impoundments would support the greatest concentrations of nesting, often in excess of one nest per acre. Alternative II would be expected to produce 4000 ducks and 200 geese annually under optimum conditions.

Alternative III would be similar to Alternative II except that an additional 1000 acre-feet of water would be provided annually from the Closed Basin Project. The total water availability of 3,700 acre-feet per year would provide for a higher density of development than in Alternative II, but productivity per unit area of wetlands would be similar. This alternative would be expected to produce 5,000 ducks and 250 geese annually under optimum conditions.

Alternative IV, to obtain and develop 3,700 acre-feet of water per year as in Alternative III plus an additional 3,300 acre-feet from the Closed Basin Project, is considered full development for the WHA at this time. However, the likelihood of receiving this volume of water from the Closed Basin Project is highly unlikely. This volume (6,000 acre-feet per year total) is the maximum which could be utilized if the source is from ditches.

Full development would still be about 9,200 acre-feet/year if it were available from small volume artesian wells, but ditch water cannot be used in many of the higher isolated basins. Alternative IV would be expected to produce about 7,500 ducks and 375 geese annually.

Each of the above alternatives could be supplemented by 6 artesian wells or a total of about 300-400 acre-feet of water per year if a proposed test well program is carried out. The Rio Grande Water Conservancy District has proposed 6 wells on the Blanca WHA to test the effects of the Closed Basin Project on artesian wells. But, these wells are considered tentative at best, and definite plans cannot be made for the water.

Since Alternative I, maintenance of the existing development, will not allow the habitat to reach its full potential per unit area of development, it is recommended that the Alternative II level of development be implemented as a minimum course of action. This would not preclude development of Alternatives III or IV if some or all of the necessary water becomes available from the Closed Basin Project at a later date.

Implementation of the Alternative II level of development will involve obtaining and developing an additional 1,100 acre-feet of water per year for an annual total of 2,700 acre-feet. This would require utilization of BLM personnel and a BLM owned or leased drill rig to drill 9 new artesian wells and improve the two existing pump wells. This increased water supply would also allow utilization of three fishpond-dike systems which were built for the Rio Grande Water Conservancy District's artesian test wells. These test wells may never be drilled now, and the earthwork is useless without water.

The proposed projects and the habitat which will result if the Alternative II level of development is implemented are shown in Figure 3. The availability of water and the projected habitat acreages are compiled in Table 5 for the same Alternative.

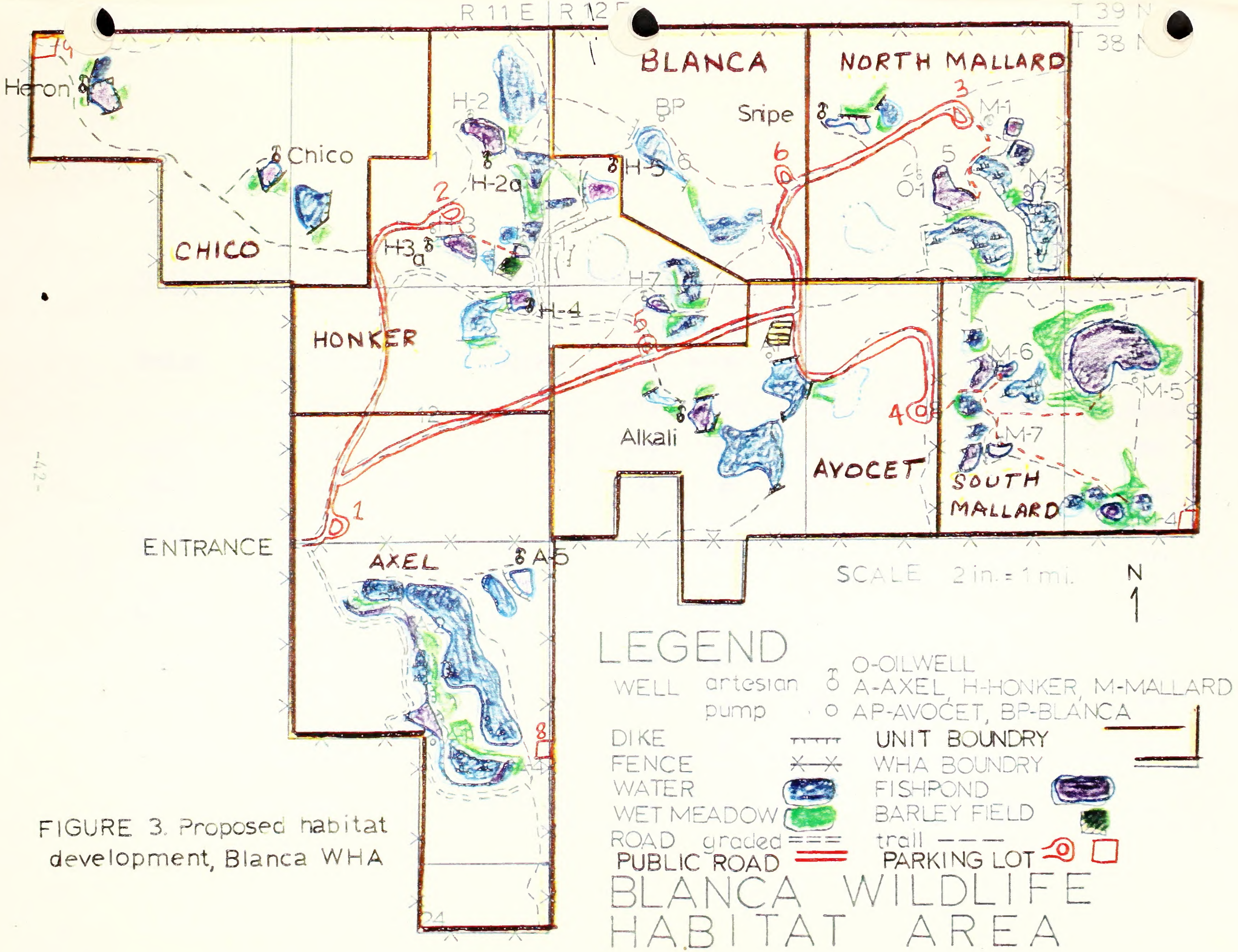


FIGURE 3. Proposed habitat development, Blanca WHA

Table 5. Proposed habitat development of Blanca WHA, Alternative II.

System	Wells			Fishponds		Acres Water	Acres Wet Meadow	Total Acres Wetland	Acres Barley	Acres Undeveloped	Total Acres In System
	No.	gpm	acre-ft/yr.	No.	acres						
Axel	5	300	480	5	15	130	33	163	0	883	1046
Avocet	2	175	280	1	5	59	20	79	6	760	845
South Mallard	4	335	536	6	64	98	65	163	0	481	644
North Mallard	4	250	400	4	20	78	29	107	0	537	644
Blanca	1	125	200	0	0	35	12	47	0	475	522
Honker	8	415	664	6	26	103	33	136	8	821	965
Chico	2	100	160	2	10	22	10	32	0	692	724
Total WHA	26	1700	2720	24	140	525	202	727	14	4649	5390

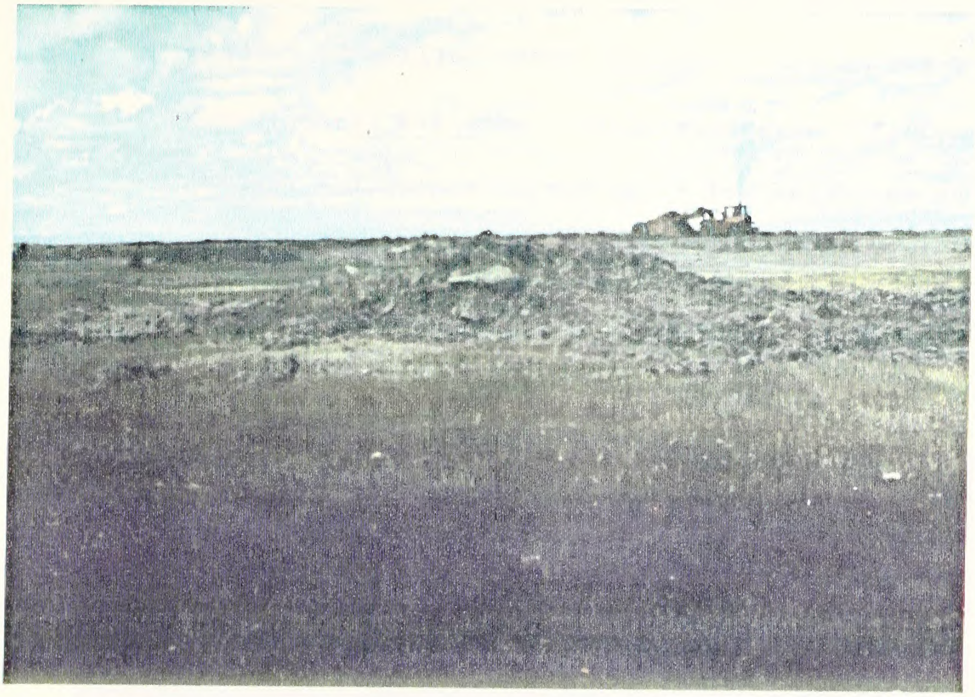
a. Direct Actions. The following management methods will be utilized regardless of the alternative level of development which is ultimately implemented. Specific projects are summarized in Table 6 (page 53) for Alternative II, the recommended minimum level of development, following this description of methods.

1.) Waterfowl, Shorebirds and Other Waterbirds.

a.) Construct dikes, ditches and water control structures to distribute and manipulate all available water to obtain the water and vegetative habitat components desireable for optimum waterfowl nesting.

All project plans will be developed by the project wildlife biologist, but actual engineering and design will be done by qualified engineers or technicians.

b.) Construct earth mounds about 30 ft. long x 20 ft. wide x 3 ft. high (above water) within the take area of each pond prior to flooding to provide nesting islands for geese, ducks and shorebirds. The side slope on these islands should not be greater than 4:1, and the total above water surface area of the islands should not occupy more than 25-30 percent of the water surface area in any pond. Also, install floating and/or platform goose nesting structures where islands are impractical.



Newly Constructed Nesting Island

at the Blanca WHA

c.) Transplant rootstock, if necessary, to obtain interspersion of the ponds and shorelines with desirable emergent vegetation for waterfowl and waterbird food and cover such as softstem bullrush (Scirpus validus) and alkali bullrush (Scripus paludosus). Desirable submergent food species such as sago pondweed (Potomogeton pectinatus), longleaf pondweed (p. fruitans), and northern arrowhead (Sagittaria cuneata) will establish naturally in the permanent ponds.

d.) Periodically irrigate areas adjacent to the ponds

using trickle tubes, etc. to produce dense wet meadows of shallow water emergents such as black rush (Juncus balticus), blunt spikerush (Eleocharis obtusa) and sedges (Carex spp.) for waterfowl and shorebird nesting cover. These cover species will establish naturally with timely irrigation.

Duck Nest in Dense Black Rush Meadow

e.) Seed all disturbed areas with a seed mixture which includes native plants as available and introduced cover plants including yellow sweet clover, tall wheatgrass, pubescent wheatgrass and crested wheatgrass. Also, annually plant about 15 acres of barley in the two existing fields, and plant Japanese millet where possible in small shallow ponds each year.

These plantings will enhance the area for waterfowl and all other wildlife by stabilizing disturbed areas and providing supplemental cover and winter food sources.

f.) Utilize livestock grazing as a direct vegetative management technique designed to benefit waterfowl by periodically renewing the vigor of shoreline and meadow cover. Refer to Chapter IV, Coordination, for further details.

2.) Fish.

a.) Construct deep-water ponds (at least 10 ft.) at each artesian well and at other locations where feasible to provide habitat for rainbow trout, brook trout and other game fish. Maintain a constant flow into each fishpond from its supplying artesian well to provide optimum water quality and temperature throughout the year. Reserve one existing fish pond for a population of Rio Grande cutthroat trout as approved by the Colorado Division of Wildlife.

b.) Manage all fish ponds for optimum fish production and fishing opportunity except where this conflicts with the primary objective of optimum waterfowl production. The capability of wetland habitat in the San Luis Valley to produce significant numbers of waterfowl and thereby contribute to continental populations is considered a higher priority than producing pounds of fish on a put and take basis for local fishing demand. Major conflicts are not anticipated; but if any do occur, waterfowl must take priority. The pond containing Rio Grande cutthroats will of course be an exception in that no fishing will be allowed and the fish will have priority over waterfowl.

c.) At the first opportunity (the first time the pond is drained), construct a deep hole in the Mallard 5 fishpond at least ten feet deep and one acre in size.

d.) Determine the feasibilty of introducing warm water species such as largemouth bass, crappie, and/or bluegill in some of the fish ponds. Refer to the Management Evaluations section for more details.

3.) Other Small Game and Non-game Animals.

a.) Plant Russian olive, shrubby caragana and other trees and shrubs along the dikes and in other irrigated upland areas to provide food and cover for mourning doves, rabbits and other small game and non-game animals. The grain and cover plants seeded for waterfowl will also benefit these species.

b.) Erect at least 100 small bird nest boxes to encourage nesting by tree swallows, violet-green swallows and other desirable hole-nesting birds.

b. Supporting Actions.

1.) Construct the system of roads, parking lots and trails which has been developed to protect wildlife habitat and control visitor use as described below under Protection Actions. It will also be necessary to construct toilets and place trash receptacles at each of the parking lots because of anticipated problems with human waste and trash. The road and parking lot will be bordered with steep-sided ditches and frequent signs to prevent off-road vehicular travel. Some problems are anticipated in the effectiveness of these methods in controlling ORV use, and it may also become necessary to fence the roads and parking lots to effectively control public use.

2.) Design and implement a system of signs to interpret the environmental changes taking place as dry shrublands are converted to wetland habitat.

3.) Renegotiate with the owner of the SE¼ SW¼ of Section 7, T. 38 N., R 12E to exchange this 40 acre parcel for the NW¼ NE¼ S. 18, T. 38 N., R 12E. Purchase of this parcel may also be possible in the future.

c. Mitigation and Protection Actions.

1.) Develop close cooperative relations with the Bureau of Reclamation to coordinate features of the Closed Basin Project and the Blanca WHA and avoid adverse impacts on wildlife habitat if possible. Actively seek water from the Closed Basin Project to develop additional wetland habitat as an enhancement and/or mitigation feature of the project.

2.) Develop a cooperative animal control plan with the

Colorado Division of Wildlife, the Colorado Division of Animal Industry, and the U.S. Fish and Wildlife Service to control nest predators and other pest species. Utilize sport harvest and trapping to the extent possible, but some trapping and denning by animal control personnel will likely be necessary.

3.) Maintain good cooperative relations with interested groups and the general public. Develop an active I & E program, including field trips to the area, to show the benefits of the project to the public.

4.) Cooperate with local, State and regional governments and planning agencies to protect the area's wildlife and habitat from adverse land use.

5.) Regulate public use of the WHA to allow its maximum use consistent with a quality recreational experience and protection of the wildlife and its habitat. This control of public use would include continuation of the following regulations already in effect:

   a.) Withdrawal from entry under the general mining and agricultural land laws.

   b.) General spring closure to all public use from March 15 to July 1.

   c.) Prohibition of off-road travel.

   In addition, the following new regulations will be effected as soon as practical:

   d.) Allow public vehicle use only on the public use road and in the parking lots approved for construction in 1977 (Figure 3, page 42). Public access to all other parts of the WHA will be by foot only. This restriction is to decrease the continual disturbance that resting and feeding waterfowl are now receiving from unrestricted vehicle use and to improve the quality of hunting and fishing.

e.) Allow no open fires to prevent destruction of cover by wildfire.

The following actions will also be undertaken if and when they become necessary for the reasons indicated:

f.) Extend the spring closure to July 15 each year. This will probably be necessary because a significant duck hatch occurs between July 1 and July 15 each year, and it is anticipated that the growing popularity of the area for fishing will cause avoidable disturbance and abandonment of nests if the area is opened on July 1. This situation will be observed during the next nesting season and the closure will be extended if necessary.

g.) Close a portion of the area (25 to 30%) to all public use each year on a rotating basis to protect resting and feeding waterfowl from human disturbance. This may become necessary in the future if walk-in access does not adequately protect the birds from the continual disturbance they are now receiving.

h.) Close the WHA to overnight camping if refuse or disturbance of wildlife becomes a problem due to camping.

It is also apparent from the problems which have been observed at existing use levels that the projected public use levels will be accompanied by sufficient infractions of the regulations to necessitate law enforcement training and authority for those BLM personnel that regularly work at the area. Proper enforcement of the regulations will be impossible without this authority for at least one person.

The habitat improvement projects needed for completion of the Alternative II level of development are listed in Table 6 according to priority. Table 6 also lists the estimated costs in funds and man months, the target species and the scheduled year of completion. Project locations are shown in Figure 3, (page 42) and detailed project plans are contained in the Job Documentation Reports in Appendix B.

Table 6. Habitat improvement projects, Blanca WHA.

Job		Man-Months		1)			Out
Prior-ity	Job Name	Purpose	Need	Cost	Units	Target Species	Year
1	Blanca pump well	Redrill & equip well-F.A.*	1 MM	$3,000	1 ea	Waterfowl	0
2	Honker 3a well	Drill well F.A.	1/3 MM	6,700	1 ea	waterfowl, trout	0
3	Honker 2a well	" " "	"	"	"	" "	0
4	Honker 5 well	" " "	"	"	"	" "	0
5	Honker 4 well	" " "	"	"	"	" "	0
6	Axel 5 well	" " "	"	"	"	" "	0
7	Alkali well	" " "	"	"	"	" "	0
8	Chico well	" " "	"	"	"	" "	0
9	Heron well	" " "	"	"	"	" "	0
10	Snipe well	" " "	"	"	"	" "	0
11	Avocet pump well	Redrill & equip well-F.A.	1½ MM	10,500	1 ea	waterfowl	1
12	Avocet dikes	EAR, Project layout, survey, contract supervision	1 MM)	(8,000	16 A	waterfowl, trout	1
13	Alkali dikes	" " "	1 MM)	(8,000	16 A	waterfowl, trout	1
14	Chico dikes	" " "	")Avg.	("	"	" "	1
15	Heron dikes	" " "	")	("	"	" "	1
16	Snipe dikes	" " "	")	("	"	" "	1

* = Force Account 1) = Does not include man-months

E. COORDINATION WITH OTHER ACTIVITIES

1. Livestock Management.

The grazing privileges for the Blanca WHA have been carried as non-use for the past several years, but commitments have been made to allow future grazing under a system designed to protect and enhance the wildlife habitat under development. An Allotment Management Plan has been written which meets these criteria, but the AMP cannot be implemented until a court-ordered Environmental Statement (E.S.) on grazing throughout the Resource Area is approved. The E.S. has been completed in final draft form and final approval is tentatively anticipated by the start of F Y '78.

Details of the Blanca AMP are available in the grazing files of the BLM's Alamosa office. The following is a summary of the AMP components pertinent to wildlife. The AMP chosen is a cost-effective alternative to the original plan.

a. Objectives.

1.) Utilize grazing to set back succession and thereby enhance and renew nesting cover density and vigor by removing 65 percent of old growth vegetation on wetland edges and wet meadows, on a five year cycle.

2.) Increase the total vegetative cover density, on the non-irrigated portions of the allotment from the present 15 percent to 20 percent in 15 years to optimize waterfowl nesting cover and reduce the SSF from the current 41 to 30, and 30 to 25 in 10 years.

3.) Increase the combined composition of Indian ricegrass, western wheatgrass and alkali sacaton on the upland sand dunes and hummocks from the present 5 percent to 15 percent in 15 years to provide nesting cover for waterfowl and forage for livestock and herbivorous wildlife.

b. Grazing System.

A four pasture rest-rotation system will be used. Three pastures in the system are in this allotment and one pasture in the Four Mile Allotment. The system is a five year system with one large pasture (Honker in Blanca) being grazed 2 out of 5 years, and all other pastures in the system being grazed 1 year in 5.

Treatment	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
A									Graze			
B	Yearlong rest											

c. Schematic Plan.

Treatment schedule by pastures.

Year	Four Mile	Axel	Honker	South Mallard
1	B	A	B	B
2	B	B	A	B
3	B	B	B	A
4	B	B	A	B
5	A	B	B	B
6	B	A	B	B
7	B	B	A	B
8	B	B	B	A
9	B	B	A	B
10	A	B	B	B

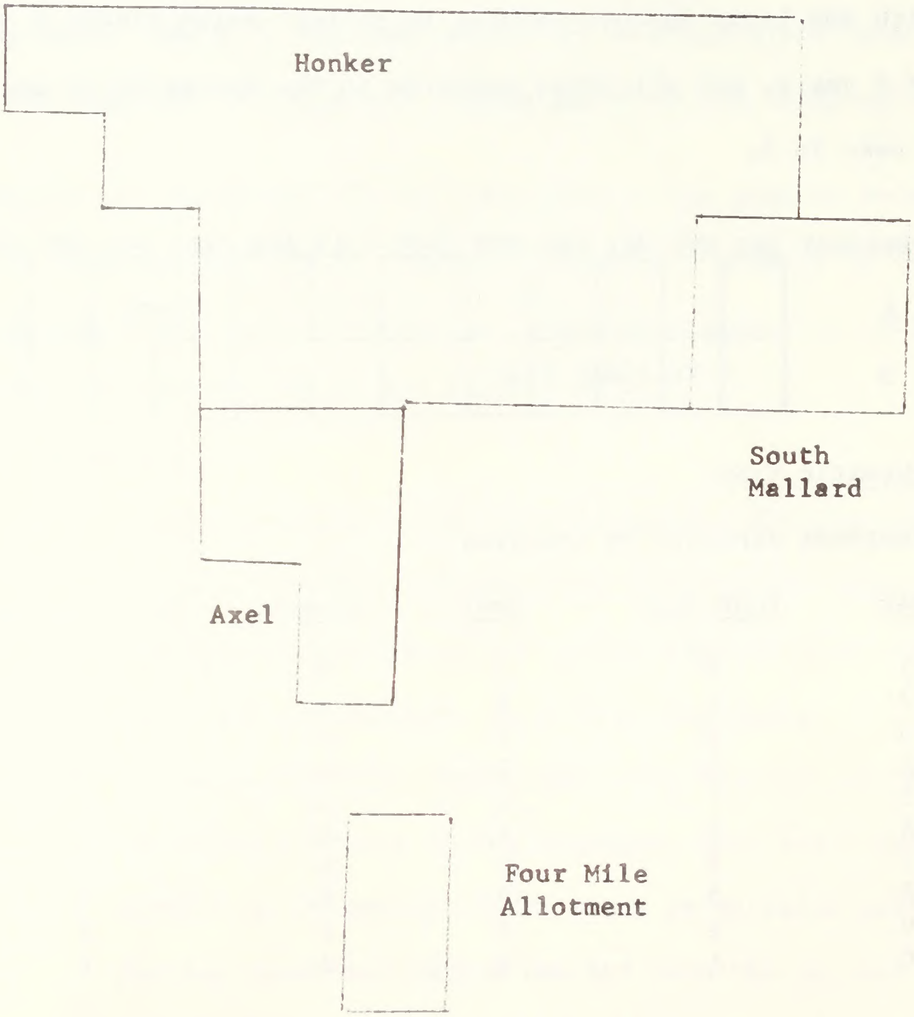
d. Normal Operation.

Eighteen cattle August 1 to September 30 @ 100% F.R. = 36 AUM's. This is very flexible. It may be necessary to increase the grazing pressure considerably to accomplish the objectives.

e. Facilitating Measures.

No improvements are necessary on the Blanca Allotment for the implementation of this plan along with the Four Mile Allotment.

Blanca Allotment



2. Recreation Management.

The Blanca WHA is an increasingly popular recreation area with public use estimated at 900 visitor-days-use in 1976. The primary attractions are artifact hunting, fishing and waterfowl hunting, but small game and varmint hunting and trapping and non-consumptive uses such as bird watching are also increasing in popularity. The area also has good potential for outdoor education and nature study especially if proper interpretive signs, nature trails, etc. are developed. This interpretive work must still be accomplished.

The WHA is desolate and relatively uninteresting from a scenic standpoint. However, the habitat development provides an abrupt contrast to the surrounding landscape that is pleasing to most people. The gray and grayed-green sand dunes and dry lakes are suddenly broken by dikes, ditches, roads, water, lush green vegetation and an abundance of wildlife.

The area has been classified in visual zone IV which implies that man-made features may dominate the landscape without causing undue negative visual impacts. There are few places in the area from which evidence of construction activities cannot be seen. The area is not visible from any major overland route.

Most of the outdoor recreation available at the Blanca WHA is directly dependent on the quantity and quality of wildlife available, but the recreational use itself is often in direct conflict with optimum wildlife productivity. These conflicts and the planned actions designed to minimize them have been discussed previously in the Wildlife Inventory and Planned Actions sections of this plan.

The general recreation objective of the plan is to provide the maximum allowable wildlife-associated recreation for the general public consistent with maximum wildlife productivity. This is intended to imply that serious conflicts would be solved by restricting recreation in favor of wildlife production and use.

Specific recreation objectives are to provide the following annually upon maturation of the developed habitat:

a. 2,000 on-site waterfowl hunter days

b. 2,000 off-site waterfowl hunter days

c. 1,000 small game and varmint hunter days

d. 5,000 fisherman days

e. 5,000 non-consumptive visitor days

f. 15,000 total recreation visitor days

These objectives would require the following primary wildlife outputs annually:

1.) Produce 4000 ducks, 200 Canada geese, 13,500 lbs. of trout, 500 cottontails and 500 mourning doves.

2.) Provide habitat capable of supporting 600,000 waterfowl use-days and 100,000 shore bird and wading bird use-days.

The cultural resources present in the Blanca WHA also require considerable coordination during habitat development work. As previously mentioned, the Dry Lakes Area which contains the Blanca WHA has been identified as containing rich archaeological values by local experts. Dr. Herbert Dick, Professor of Anthropology at Adams State College in Alamosa, Colorado, maintains that this area probably contains the best stratigraphic record of prehistoric human occupation in the Colorado portion of the San Luis Valley. Dr. Dick and others also believe that the area is deserving of nomination to the National Register of Historic Places.

A preliminary archaeological survey has been made at the Blanca WHA which resulted in a map showing the camp sites which are evident on the surface. There has also been an excavation of two sites, but no conclusive report has been received as yet. The archaeological resources are protected by 1) avoiding the identified sites if possible, or 2) excavating sites if they must be disturbed or if they are discovered under ground during construction.

3. Watershed Management and Water Quality.

There are no proposed watershed or water quality improvement methods needed as such, but many of the wildlife habitat improvement methods will improve watershed conditions by increasing ground cover vegetation. Existing water quality parameters were covered under the fisheries section of the introduction.

A potential for water pollution exists if the highly alkaline water in the unconfined and semi-confined aquifers above the "blue clay layer" is allowed to mix with deeper artesian water.

This could be avoided by proper well construction to assure that no mixing of aquifers occurs.

4. Minerals Development.

There has been an MFP decision to allow development of the Blanca WHA for the geothermal resource through competitive or non-competitive leasing. However, this leasing will only be permitted in the WHA with adequate stipulations to protect its wildlife values. The potential for geothermal development of the area is considered only slight.

5. Support Activities.

The primary support required to complete implementation of the Blanca HMP will be operations activities such as engineering, design and contract supervision of the remaining wells, dikes, ditches, etc. If present plans are followed the wells and the road system will all be completed during the current F Y '78. This would put the WHA on a maintenance schedule starting in F Y '79, and a new position will be necessary to perform maintenance on the dikes, islands, pump wells, etc. A WAE wildlife technician, GS-7/9 would be well suited for these duties plus the biological duties which are now being done by the temporary wildlife technician (GS-5) each summer.

Neither physical nor legal access are problems now and none are anticipated in the near future. Legal easements may be required in the long range future to provide access to proposed parking lots 7, 8 and 9 in the southeast, southwest and northwest corners of the WHA (see Figure 3, page 42). However, these parking lots may never be needed, and it would be undesirable to acquire the easements until the peripheral parking lots are needed for use. It is intended to allow vehicular access only at the main entrance until crowding requires additional parking space. Easements would encourage vehicles to attempt to use the other gates and vandalized gates, etc. would result.

Other support activities required to complete the HMP are printing the plan and a final recreation map, and archaeological clearance for the remaining projects. Table 7 lists the support activities required to complete implementation.

Table 7. Support activities required to complete implementation of the Blanca HMP.

Support Activity	Man-Months By Out Year		Costs
	1	2*	
Plan printing	-	-	500
Recreation Map	-	-	500
Operations	6	2	
Archaeological clearance	1	-	
Wildlife Technician	6	6	

* year 2 and beyond will be the maintenance level.

6. Other Coordination.

The ORV closure described under planned actions will require public notice and publication in the Federal Register before implementation in accordance with ORV regulations.

F. ENVIRONMENTAL ANALYSIS RECORD (EAR)

An umbrella EAR, number 050-73-29, has been prepared for the Blanca HMP. Supplemental EAR's have also been prepared each year since 1975 and for the road to be constructed in 1977. The umbrella EAR and the 1975 supplemental EAR are presented in the following pages.

G. IMPLEMENTATION SCHEDULE AND COST ESTIMATE

Program package forms 1610-27 and 1610-28 are presented in the following pages for the two remaining years required for implementation and for the maintenance level of funding. Project costs and personnel requirements are summarized below. The only new position required will be a wildlife technician (GS-7/9) to perform routine maintenance and biological duties at the WHA.

Personnel requirements:

		Man-Months		
Position, title	Grade	Calendar Year (FY '77)	Budget Year (FY '78)	Program Year Maintenance Level
Wildlife biologist	GS-11	8	8	6
Engineering tech	GS-8	6	4	-
Operations	-	4	4	1
Administration		2	2	1
Wildlife tech (T)	GS-5	4 (T)	6 (T)	6 (T)
Fisheries biologist (or coop.ed.student)	GS-11 (GS-4)	-	4 or 4 (T)	4 or 4 (T)
New Wildlife tech	GS-7/9	-	12	12
Total MM-(No. positions)		24 (2)	38 (3)	30 (3)
Permanent (No. positions)		20 (1)	32 (2)	24 (2)
Temporary (No. positions)		4 (1)	6 (1)	6 (1)

Construction and maintenance requirements:

Current Year (FY '77). Complete all well drilling as approved in the AWP and amended at mid-year review.

Budget Year (FY '78)

A.	Complete avocet pump well	$10,000
B.	Construct 5 dike systems @ $8,000 1. Avocet pump 2. Alkali 3. Snipe 4. Chico 5. Heron Honker 2, 3, 4, 5, and Axel 5 systems already exist.	40,000
C.	Pump well maintenance - Blanca well	1,500
D.	Tractor maintenance	1,500
E.	Artesian well maintenance 3 @ $2,500	7,500
F.	Fishpond maintenance - dragline	2,500
G.	Other maintenance	2,000
		$65,000

Program Year (FY '79)

Start Annual Maintenance Schedule

1.	Pump wells - fuel, engine overhauls, etc. 2 @ $1,500	$ 3,000
2.	Tractor (backhoe) - fuel, maintenance, etc.	1,500
3.	Artesian well maintenance - cleaning 2 each year @ $2,500	5,000
4.	Materials, seed fence repair, signs, etc.	2,500
		$12,000

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PROGRAM PACKAGE COVER SCHEDULE

PACKAGE IDENTIFICATION	STATE	PY	Priority	Package Life
	C 0	7 9		

Package Name: Blanca HMP (continued)

Package Purpose

Program Area

(1)		CURRENT YEAR FY 19 (2)	BUDGET YEAR FY 19 (3)	PROGRAM YEAR FY 19 (4)	PROGRAM YEAR + 1 FY 19 (5)	PROGRAM YEAR + 2 FY 19 (6)	PROGRAM YEAR + 3 FY 19 (7)	PROGRAM YEAR + 4 FY 19 (8)	TOTAL (9)	AVG. ANNUAL PROGRAM OPERATIONS FY 19 (10)
A. COST DATA		$000'S	$000'S	$000'S	$000'S	$000'S	$000'S	$000'S	$000'S	$000'S
Total Costs (Form 1610–28)										
Construction (Form 1610–28)										
Construction Maintenance (Form 1610–28)										
Total Costs Less Construction and Maintenance										
WASHINGTON OFFICE USE ONLY										
B. MANPOWER DATA		MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS
Permanent										
Temporary										
C. OUTPUT AND WORKLOAD MEASURE DATA		QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
Fisherman Days Added	a	600	800	1,000	1,200	1,400	1,650	1,900		
	b	400	400	400	400	400	400	400		
	c	200	400	600	800	1,000	1,250	1,500	5,750	
Non-Consumptive Visitor Days Added	a	500	600	800	1,000	1,200	1,400	1,600		
	b	400	400	400	400	400	400	400		
	c	100	200	400	600	800	1,000	1,200	4,300	
Endangered Species Protected	a	1							1	
	b	0							0	
	c	1							1	
	a									
	b									
	c									
	a									
	b									
	c									
	a									
	b									
	c									

(Instructions on reverse)

Form 1610–27 (October 1974)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PROGRAM PACKAGE COVER SCHEDULE

PACKAGE IDENTIFICATION	STATE	PY	Priority	Package Life
	CO	79		

Package Name: Blanca HMP

Package Purpose: Update of HMP/Wetland

Program Area: San Luis Resource Area

(1)		CURRENT YEAR FY 19 77 (2)	BUDGET YEAR FY 19 78 (3)	PROGRAM YEAR FY 19 79* (4)	PROGRAM YEAR + 1 FY 19 (5)	PROGRAM YEAR + 2 FY 19 (6)	PROGRAM YEAR + 3 FY 19 (7)	PROGRAM YEAR + 4 FY 19 (8)	TOTAL (9)	AVG. ANNUAL PROGRAM OPERATIONS FY 19 79* (10)
A. COST DATA		$000'S	$000'S	$000'S	$000'S	$000'S	$000'S	$000'S	$000'S	$000'S
Total Costs (Form 1610–28)		122	156	84					278	84
Construction (Form 1610–28)		45	40	-					85	-
Construction Maintenance (Form 1610–28)		19	25	12					44	12
Total Costs Less Construction and Maintenance		58	91	72					149	- 72
WASHINGTON OFFICE USE ONLY										
B. MANPOWER DATA		MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS	MAN-MONTHS
Permanent		20	32	24						
Temporary		4	6	6						
OUTPUT AND WORKLOAD MEASURE DATA		QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
Acres of Wetland Habitat Improved	a	600	725						725	
	b	470	470						470	
	c	130	255						255	
Waterfowl Production Added	a	500	750	1,000	1,250	1,500	1,750	2,000		
	b	300	300	300	300	300	300	300		
	c	200	450	700	950	1,200	1,450	1,700	6,650	
Waterfowl Use-days Added	a	200,000	220,000	240,000	260,000	280,000	305,000	330,000		
	b	180,000	180,000	180,000	180,000	180,000	180,000	180,000		
	c	20,000	40,000	60,000	80,000	100,000	125,000	150,000	575,000	
Shorebird & Wading Bird Use-days Added	a	40,000	45,000	50,000	60,000	70,000	80,000	95,000		
	b	35,000	35,000	35,000	35,000	35,000	35,000	35,000		
	c	5,000	10,000	15,000	25,000	35,000	45,000	60,000	195,000	
Hunter Days Added	a	300	400	600	800	1,000	1,300	1,600		
	b	200	200	200	200	200	200	200		
	c	100	200	400	600	800	1,100	1,400	4,600	
Pounds of Fish Produced Added	a	8,500	9,500	11,500	13,500	13,500	13,500	13,500		
	b	7,500	7,500	7,500	7,500	7,500	7,500	7,500		
	c	1,000	2,000	4,000	6,000	6,000	6,000	6,000	31,000	

Instructions on reverse)

*Maintenance Level Starting in FY '79

Form 1610–27 (October 1974)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PROGRAM PACKAGE INPUTS SCHEDULE

PACKAGE IDENTIFICATION

STATE		PY	
C	0	7	9

Package Name
Blanca HMP (continued)

SUBACTIVITY AND POSITION IDENTIFICATION	CURRENT YEAR FY 19			BUDGET YEAR FY 19			PROGRAM YEAR FY 19			PROGRAM YEAR + 1 FY 19			PROGRAM YEAR + 2 FY 19			PROGRAM YEAR + 3 FY 19			PROGRAM YEAR + 4 FY 19		
(1)	TOTAL COST (000's) (2)	POSITIONS (3)	M/M (4)	TOTAL COST (000's) (5)	POSITIONS (6)	M/M (7)	TOTAL COST (000's) (8)	POSITIONS (9)	M/M (10)	TOTAL COST (000's) (11)	POSITIONS (12)	M/M (13)	TOTAL COST (000's) (14)	POSITIONS (15)	M/M (16)	TOTAL COST (000's) (17)	POSITIONS (18)	M/M (19)	TOTAL COST (000's) (20)	POSITIONS (21)	M/M (22)
4350-Wildlife Management	109	2	24	152	3	38	81	3	30												
Permanent Personnel		1	20		2	32		2	24												
Temporary Personnel		1	4		1	6		1	6												

(Instructions on reverse)

Form 1610-28 (October 1974)

ACTIVITY 1285

ENVIRONMENTAL REPORT FACE SHEET

OFFICE: Canon City District FY & REPORT # 050-73-22

IDENTIFY: Blanca Wildlife Area WHA-TI SERIAL NO. C-
(Project Name, Case Type, etc.)

REQUIRED BY 43 CFR 23: YES ☐ NO ☐

NEEDS "102 STATEMENT": YES ☐ NO ☒

TEAM SIGNATURES:	TITLE	RESOURCE VALUES ASSIGNED
	Wildlife Biologist	Team Leader
Mark A. Strong	Wildlife Biologist	Wildlife
Robert E. Vecchio	Area Manager SLRA	All
	Soil Scientist	Watershed Water Quality
	Recreation Specialist	Recreation Aesthetics

ENVIRONMENTAL COORDINATOR: John T. Benson 2/25/74
(Signature) (Date)

DISTRICT MANAGER:
(Signature)
2/25/74
(Date)

CSO-1700
12-1-72

ENVIRONMENTAL ANALYSIS REPORT

BLANCA WILDLIFE HABITAT AREA WHA-TI

1. Description of the Proposed Action

The proposed action is to implement the Blanca Wildlife Habitat Plan by converting a dry desert environment into a productive wildlife habitat area primarily for waterfowl. Planned conversion is to be brought about through the use of additional artesian and pump water with associated distribution systems. The plan also provides for increased recreational use.

Detailed information on existing conditions and planned improvements are filed in the Blanca Wildlife Habitat Plan WHA-TI and supporting Intensive Inventory and Analysis.

In order to implement this plan and assure protection of BLM's investment, a Protective Withdrawal will be required which would segregate from mineral entry under the 1872 Mining law and appropriation under the public land laws.

Alternatives to the proposed action are as follows:

1. No further development (no action).

2. Partial development with artesian water only.

2. Description of the Environment Affected

A. Physical Environment

The Blanca Wildlife Area is located in the San Luis Valley of South Central Colorado, about 9 miles northeast of Alamosa. The area encompasses some 5,390 acres of Natural Resource Lands within the Blanca Planning Unit.

The area is within the "Closed Basin Sump", being comprised of numerous dry lake playas, partially stabilized dunes, and dry basins with sandy hummocks. Being in the bottom of the sump, there is no significant drainage from the area.

The Closed Basin Sump is an area north and east of the Rio Grande River drainage which collects runoff and ground water from the San Juan and Sangre de Cristo Ranges with no surface outflow. Some of the ground water is believe to leave the closed basin to the south.

The area is relatively flat with elevations ranging from 7,505 to 7,530 feet. Precipitation averages less than 7 inches annually. Temperatures range from -50 to the high 80's.

The entire area is underlain with ground water, often within a foot of the lower basins. Below the hydrolic separation or blue clay layer (about 100 feet) artesian water is present. Six existing wells have tapped the artesian acquifer and are presently providing the existing water supply. Approximately 400 acres of dry land has been converted to wet or irrigated land.

Soils vary from well drained wind modified alluvial sediments of sandy texture to scaley, heavy clay and clay loam which is poorly drained with high exchangeable sodium.

A complete mineral investigation has been completed on the area and no potential for locateable or leaseable mineral found. Proposed segregation of the area against mineral entry was not protested by the Colorado Mining Association.

B. Plant and Animal Life

Greasewood (Saracobatus vermiculatus) rubber rabbitbrush (Chrysothamnus nauseosus) and four-wing saltbush (Atriplex canescens) are the major shrubs and comprise the general aspect of the area. The understory generally consists of fringed sage (Artemisia frigida), salt grass (Distichlis stricta), alkali sacaton (Sporobolus airiodes) and blue grama (Bouteloua gracilis) and various annual forbes. Spike rush (Eleocharis spp.) wire rush (Juncus balticus) and sedges (Carex spp.) occur where the water table is near th surface and near flowing wells. Plant density is generally low, 10 to 15 percent ground cover. The area is completely void of trees.

The Blanca Wildlife Habitat Area is important to several species of shorebirds, and waterfowl which are attracted to recently developed wetlands. Game animals common to the area are mourning doves and cottontail rabbits. Important non-game species common to the area include golden eagles, bald eagles, coyotes and white-tailed jack rabbits. The area supports the usual compliment of small birds, mammals, reptiles and amphibians found in high desert regions.

No known rare or endangered species are known to inhabit the area, however peregrine falcons likely frequent the area at times.

C. Cultural Values and Use by Man

Livestock grazing has been removed from most of the area and the qualifications are being carried as non-use. Range conditions are improving rapidly inside the area, especially where irrigated.

Recreation use on the undeveloped area is limited to off-road vehicle travel and rabbit and predator hunting. Fishing, hunting and bird study is becoming increasingly popular around the newly developed areas. Less than 500 visitor use days were recorded in the area in 1972.

An archeological inventory has been completed identifying thirteen sites which were probably used by prehistoric man. A few scattered arrowheads have been found throughout the area indicating that the area was used as a hunting ground during periods of occasional flooding.

A research of the history of the San Luis Valley has turned up no significant historic or cultural values in the area covered by the proposed action.

3. Analysis of the Proposed Action and Alternatives

A. The Proposed Action

(1). Unmitigated Impacts

During the period of construction some disturbance to soil and vegetation will occur, but because of the low precipitation and short drainage patterns no increased erosion is expected. As water is applied the vegetative cover should increase significantly.

Artesian water used will be consumed on the surface through evapotranspiration and will be lost from the acquifer. The amount is very small and no impacts on other wells or water sources is expected. Pump water consumed on the area is currently being lost to evapotranspiration and should result in no change in the water table outside the cones of influence. No impact will occur outside the area.

Although some impact on the open space quality of the area will occur from roads, pumps, fences and possible power lines, the improvement in vegetative cover and wildlife should offset these losses.

Because of present non-use of the area and planned increases in water and plant cover, range conditions will be improved. As plant succession developes, livestock grazing will likely be allowed in the area.

Planned development will cause some shifts in recreation use. Present uncontrolled off-road vehicle use and non-game hunting would be significantly curtailed. Visitors would be able to use only a small portion of the area during the nesting season. Some areas would remain closed to the public during the hunting season in order to provide sanctuaries for resting game species. All of these restrictions are designed to improve and increase the overall recreation capability of the area. Study, hunting and fishing are planned.

Archeologic values could be destroyed during excavation and flooding phases of construction.

(2) Possible Mitigating Measures

In order to minimize soils and vegetative disturbance during construction, natural relief features should be used for dikes where possible. Barrow areas should be confined to sites to be inundated. All disturbed areas should be reseeded and areas to be farmed should be done so with good soil and water conservation practices.

In order to conserve the artesian water supply, wells should be shut down during periods that the water is not needed. All water should be used to the fullest extent possible for planned benefits.

An archeologist should be on hand during all construction periods. If a site is uncovered, all valuable material should be removed. Construction work should be suspended until archeological values are either protected or removed.

In order to protect the aesthetics of the area all improvements should be located to be an inconspicous as possible. Pumps, wells, fences, signs, etc. should be made to blend with natural features. Long stretches of straight road or dike should be avoided.

(3) Adverse Impacts that Cannot be Avoided

The following unavoidable adverse impacts are anticipated.

1. Consumption of a small amount of artesian water.

2. Restrictions on visitor use during nesting and hunting seasons.

3. Increased visible improvements and human use may reduce the open space quality of the area. This may not be an "adverse impact" in some minds.

(4) Relationship between Short-Term Use and Long-Term Productivity.

~~Term Productivity~~

The area under consideration is relatively unproductive to man in its undeveloped state except from an open space standpoint. During the life of the project, benefits to man far outweigh the environmental costs. Theoretically, the area could be completely restored to its natural condition over a period of time.

(5) Irreversible and Irretrievable Commitment of Resources

None identified.

B. Alternative 1 - No further development.

The alternative of "no action" would result in no additional environmental impact. Considerable improvement work has already been completed. These features will be retained regardless of future developments.

C. Alternative 2 - Partial development with artesian water only.

Partial development would have the same environmental impact as the proposed action except to a lesser degree. At partial development, the obligation and changed uses of resources would be slight. Present uses such as non-game hunting, ORV use, etc. could be allowed on a large portion of the area without conflict.

4. Public Interest and/or Controversy

BLM has obtained the support of the Colorado Division of Wildlife, Bureau of Sport Fisheries and Wildlife, Rio Grande Water Conservancy District, Alamosa County Chamber of Commerce and most private citizens. A questionnaire circulated by Adams State College showed only a very few people opposed to the project. These individuals felt that the use of water for wildlife propogation was a "waste".

Controversy may be generated by the proposal to close the area from recreational use during certain periods of time. This could be discussed at a public meeting where citizens could gain a better understanding of the problem and need for restricted use.

5. Recommendation of Preferred Action

a. Based on the foregoing facts and analysis the environmental team recommends that the proposed action should be allowed from an environmental standpoint. The items listed under 3A(2), Possible Mitigating Measures, should be followed and should be integrated with any contracts or proposals for development.

b. It is the opinion of the reporting team that the proposed action does not fall in the category of a "Federal action significantly affecting the quality of the human environment" as defined in Section 102-C of NEPA. We therefore conclude that an environmental impact statement is not required.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EAR FACE SHEET

OFFICE: Canon City District FY & REPORT # CO-050-6-305

ACTION: Blanca Wildlife Area WHA-51(Supplemental) NO. OF PAGES [illegible]
(Project Name, Case Type, etc.)

LOCATION: BWHA - 15 miles Northeast of Alamosa SERIAL NO. C.-

REQUIRED BY 43 CFR 23: YES ☐ NO ☐

TEAM SIGNATURES:	TITLE	RESOURCE VALUES ASSIGNED	HOURS
	N.R.S.	Team Leader	7
	Wildlife Biologist	Wildlife	1
	Recreation Specialist	Recreational	3
Donald W. Messer	N.R.S.	Water	1
Leslie A. Olver	Chief, Div. Res Mgmt.	Review	

ENVIRONMENTAL COORDINATOR: R. Huebschman 10/24/75
(Signature) (Date)

COMPLIANCE OFFICER: SLRA - Manager
(Title or Name)

DISTRICT MANAGER: R. McElroy
(Signature)
10/24/75
(Date)

Description of the Proposed Action

The proposed action consists of F.Y. '75 maintenances and new construction projects on the Blanca Wildlife Habitat Area. These proposed projects can be separated into the following catagories.

Blanca Dike Maintenance

This action consists of repairing three sets of earthen dikes. Repairs are needed because of washouts in the dikes caused by muskrat activity. Maintenance work will consist of dredging dirt from the canal bottoms with a dragline and placing it on top of existing dikes. Approximately 4 to 6" of soil will be placed on the dikes where repairs are needed. The maintained dikes will then be seeded with a mixture of grass and forb seed to eventually produce a protective vegetative covering.

Blanca Rip-Rap Maintenance

This action consists of hauling potato rock to about 13 sets of dikes and spreading the rock on the dike faces to prevent wave action from eroding away the dikes. The rock also prevents rainstorms from eroding the dikes. This is considered maintenance of existing structures and all the rock will be obtained from outside the Blanca area and trucked to the individual sites. The rock rip-rap will be spread throughout the dikes with the use of a front-end loader.

Outlet Maintenance

This consists of installing an overflow headgate in the Axle #1 dike and culverts in the Mallard dikes. The structure in the Honker system was included in last years work and is already completed. Work will consist of cutting through the dikes with a backhoe, installing the pipe and headgates and refilling the trench. Purpose of these structures is to control the water level in the wetland created by the dikes. Structures will serve as drainage overflows. None of these waters contain fish.

Barley Seedings

This consists of improving two 15 acre areas for seeding barley for waterfowl feed. In the Honker field work consists of hauling, spreading and plowing in manure on a previously leveled field. Manure will be obtained from outside the area and hauled to the locations. Spreading will be done with either a manure spreader or motor patrol. Plowing will be done by pulling a plow behind a rubber-tired tractor. This same process will take place in the South Mallard field except prior to this, the acreage will be leveled and ditched. Both fields will be drill seeded in the Spring of '76. No new disturbance will occur in either case as both areas have either been previously planted or previously leveled and ditched.

Well Maintenance

This job is considered maintenance work on an existing well. Work consists of drilling and casing a well to a depth of 500' to get artesian flow. Casing will be either 6" or 7". Equipment needed will be a drilling rig. Only the immediate area of the drilling site will be disturbed.

Blanca Fishpond Maintenance

This consists of deepening 5 ponds by the use of a dragline. Purpose of this deepening is to enhance these ponds as fisheries. One of these ponds, (Mallard 5) contains trout. This pond is large enough so that turbidity of the water during dredging will have no adverse effects on fish life.

Also included in this catagory is the development of trout spawning runs at two pond inlets. This will consist of deepening inlet channels with a backhoe and adding gravel to provide a spawning habitat. Gravel will be hauled in from outside the area. Some turbidity will occur during this process, but the one pond that contains trout is large enough so that no adverse effects will result to existing fish life. Water turbidity created by all this work would be less than that caused by wave action and dust from spring and summer wind storms.

Fencing

This consists of constructing 1½ miles of 4-strand barbed wire fence along the east and south boundary of the Blanca W.A. The fence is necessary to prevent neighboring livestock from trespassing onto the area. No blading or clearing of the fenceline will occur so site disturbance should be minimal.

Dike Construction

This will consist of constructing new dikes to develop two separate wetland areas. Water for one will be provided by the maintained oil well artesian that was discussed earlier. Water for the other will be provided by a pump well. Dikes and islands will be constructed by a dozer and/or carryall. Soil for the dikes will be taken from the area that will be covered with water. There will be temporary disturbance while construction is taking place but the areas will heal over quickly and the benefits derived for waterfowl and fish will for outweigh the temporary adverse effects.

Pump Wells

Part of this work will consist of installing a pump and gas engine on a pump well that was drilled and cased last year. Also included will be a 20 x 25 foot building to enclose the pump and engine and a chain link fence around the building to protect the entire works from vandalism.

The other part of this category consists of drilling and casing two other wells to a depth of 100'. These will be pump wells with 26" casing. Only drilling and casing will take place at this time, but eventually the engine, building and fence, as discussed above, will become a part of each well.

Location maps for all of the various job that make up the proposed action are attached.

Description of the Existing Environment

The Blanca Wildlife Area EAR #050-73-29 is generally adequate. More information, however, has been gathered on the area's cultural resources since the report was written.

The Dry Lakes area, on which the Blanca Wildlife Habitat Management Area is being developed, has been identified by Herbert Dick, PhD., as a rich archeologic resource. He maintains, with the support of Dr. Buckles of the University of Southern Colorado, that this particular area probably contains the best stratigraphic record of prehistoric human occupation in the entire Colorado portion of the San Luis Valley. Presently little is known about the specific prehistory of the valley because most of the sites previously located were scattered and could only offer fragmented information.

Dr. Dick, professor of physical anthropology at Adams State College, has made a survey of the Blanca WHMA and located 137 sites, some of which are complexes. His finalized report has been submitted to this office.

It is felt that this area would qualify for inclusion on the National Register of Historic Places.

Analysis of the Proposed Action

In all of the proposed actions, both new construction and maintenance, there will be some disturbance to soil and vegetation during the period when work is taking place. In most cases the disturbed areas will be minimal and in most cases the areas will recover.

The proposed fence could cut off access to the area.

The newly constructed dikes and even the old dikes to be maintained will be susceptable to erosion since they will have no vegetative cover.

The proposed pump house and fence will have a visual impact on the landscape.

The pond dredging and channel work will cause some turbidity in the ponds being worked on. Trout have been stocked in one of these ponds, but the pond is large enough so that fish life will not be adversely affected.

Unmitigated Impacts

These would be essentially the same as those described in the Blanca Umbrella EAR #050-73-29. The only additional impacts are as follows:

Anticipated impacts on this area are the possible disturbance and destruction of archeologic sites through the various surface disturbing activities in the presently proposed actions. It should be noted that Dr. Dick has indicated that merely flooding these sites should not harm them.

Possible Mitigating Measures

In construction of the 1½ miles of fence, gates should be provided on existing roads so access to the area is not obstructed.

The building that is to be built to enclose Pump Well #1 should be painted a sage green or tan color to reduce the visual impact on the landscape.

All disturbed areas caused from dike construction, dredging ponds, etc., should be seeded with a mixture of grass and forb seed, as recommended by the area staff.

In all proposed work phases, the contractor and his employees should be made to use existing roads as much as possible.

Possible mitigating measures for the hazards, to archeologic sites implied by the surface disturbing conditions are adequately covered by the legally required procedures for clearance of any surface disturbing activities on any area of land that is on the National Register of Historic Places, nominated for the Register, or considered to be qualified for nomination to the Register. This Opinion is shared by Dr. Dick and Gardiner Dalley, (former) Colorado State Office Archeologist. Mr. Dalley has also indicated that the Dry Lakes area is undoubtedly suitable for nomination to the National Register and should be considered "eligible".

The legally required procedures previously mentioned for clearance of surface disturbing activities in such an area are described in 36 CFR 800. A copy is attached.

Adverse Impacts that Cannot be Avoided

The unavoidable adverse impacts were adequately addressed in the Blanca umbrella EAR #050-73-29.

If procedures described as possible mitigating measures are followed, the residual impacts to the cultural resources will be negligible.

Recommendation

It is the opinion of this team that the benefits derived from the proposed action outweigh the adverse environmental impacts and therefore the actions should be allowed. It is also recommended that the items listed under Possible Mitigating Measures be made a part of the applicable contracts and be followed up by inspection.

H. MANAGEMENT EVALUATION AND REVISION

Records of wildlife studies for the Blanca HMP are kept in the files at the BLM's Alamosa office. A schedule of these studies is listed in Table 8.

The waterfowl and other population studies are designed to measure progress towards the objective use-day levels for waterfowl, shorebirds and wading birds and to constantly update the species list. Waterfowl production studies will measure progress towards the stated waterfowl production objectives.

The bird-banding, wildlife harvest (including fish) and visitor use studies will measure progress towards the visitor day and fish production objectives. Habitat conditions will be judged from the vegetative photo-trend studies and well-flow and water quality measurements are intended to monitor rather than judge progress.

The fisheries studies would be conducted, preferably by a cooperative education student majoring in Fisheries Biology, during a two summer period to determine the optimum species and management practices which should be used in the fish ponds.

All studies will be done in cooperation with the Colorado Division of Wildlife and some such as wildlife harvest will be done primarily by CDW. CDW and U.S. Fish and Wildlife Service will be responsible for waterfowl banding.

The Blanca HMP will be reviewed at least once annually to evaluate methods, results of studies and progress toward objectives. The HMP will be revised as needed based on the annual review, new inventory data and/or MFP revisions. Plan revisions will be documented, signed and dated on the lower left hand corner of the pages affected.

Table 8. Schedule of studies at the Blanca WHA.

Type of Study	Method	Time	Schedule	Responsibility	MM	Cost	Results
Waterfowl population	weekly total count of area	weekly	annual	BLM-DOW	.7	700	weekly population and use-days
Other wildlife population	weekly total count & running species list	weekly	annual	BLM-DOW	.3	300	weekly population & use-days, species list
Waterfowl production	breeding pair count, brood chronology count	weekly	annual	BLM-DOW	.5	500	waterfowl production estimate
Visitor-use	1-vehicle counter 2-personal contacts 3-observations	1-weekly 2,3 continual	annual	BLM-DOW	.5	750	visitor days use
Waterfowl banding	trapping & banding	Sept	annual	USFWS-DOW	.1	100	assist USFWS & DOW in population studies
Wildlife harvest and creel	random checks	random	annual	DOW-BLM	.2	250	harvest & production estimates
Vegetative photo trend	standard BLM techniques	late Aug or Sept	annual	BLM	.2	250	habitat condition trends
Forage utilization	standard BLM techniques	twice, during/after grazing	annual	BLM	.3	300	judge compliance with AMP objectives
Water quality	Hach Kit	summer	annual	BLM	.2	250	monitoring water quality
Well flows	stop watch & 5 gal bucket	quarterly Feb, May Aug, Nov	annual	BLM	.1	100	monitor water supply
Fisheries	total inventory of available habitat	summer-two years utilizing coop education student			8	1500	fish species suitabilty & management plan

I. PUBLIC AFFAIRS

1. Background.

The Blanca WHA is becoming increasingly important for local waterfowl and fish production and associated recreation. There is little opposition to the project except from a small minority which considers the use of water for wildlife habitat as "wasting water". The primary public affairs problems are involved with preventing vandalism and encouraging public users to obey regulations.

2. Objectives.

a. Prevent vandalism of signs, gates, fences, etc.

b. Create an awareness of the wildlife productivity goals at the WHA.

c. Publicize the BLM's wildlife habitat management program.

3. Target Groups.

a. Hunters and fishermen - no organized groups in the area.

b. Farmers and other water users.

c. Schools - all levels including colleges.

d. Agencies - Colorado Division of Wildlife, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, U.S. Geological Survey, Rio Grande Water Conservancy District, Colorado Division of Water Resources.

4. Techniques, Methods, Materials.

a. Slide show - continue using the existing show with periodic updating.

b. Species list - continue distribution of the existing list with updating when more are printed.

c. Recreation map - print and distribute a one page color recreation map when the development is complete, showing all public use facilities and listing regulations.

d. Field trips - continue field trips with interested groups such as college classes, etc. and invite other groups such as farmers, ranchers and other water users to tour and use the area.

e. Civic presentations - utilize above materials.

f. Public contacts - contacts at the WHA, especially by someone with law enforcement authority, would be invaluable in upgrading the image and credibility of BLM's program.

g. Environmental interpretation - this is needed at the WHA.

5. Location.

The area is primarily of local interest.

6. Time Frame.

The program is in existence and it should continue indefinitely.

7. Costs.

A minimum of 2 MM per year is currently being spent on public affairs.

Printing - recreation maps	100
Update slide program	50

8. Evaluation.

The effectiveness of the P.A. program can be evaluated during the annual HMP review by district personnel involved in the project.

The effectiveness would be based on the relative incidence of vandalism and non-compliance with regulations and an objective judgment of the BLM's image and credibility.

J. CONCURRENCE AND APPROVAL

This Habitat Management Plan has been prepared, reviewed, and approved for completion of implementation by the undersigned. Final approval date shall be that given by the last signee.

Prepared by: Mark A. Strong 9/27/77
Wildlife Biologist Date
San Luis Resource Area, BLM

Reviewed by: Robert E. Vecchia 7/27/77
Area Manager Date
San Luis Resource Area, BLM

Reviewed by: 10-14-77
Area Supervisor Date
Colorado Division of Wildlife

Reviewed by: Stuart A. Parker 10/25/77
Chief, Division of Resources Date
Canon City District, BLM

Approved by: 11/25/77
Regional Manager Date
Colorado Division of Wildlife

Approved by: Stewart A. Wheeler 10-26-77
District Manager Date
Canon City District, BLM

APPENDIX A
BLANCA WILDLIFE HABITAT AREA
WILDLIFE SPECIES LIST

The list that follows contains all the species of vertebrate wildlife which are known or believed to inhabit the Blanca WHA plus the invertebrates which are considered important either to the food chain or as human pests. Relative abundance and seasonal status of the vertebrates are coded as follows.

RELATIVE ABUNDANCE

a - abundant
c - common
u - uncommon
r - rare
+ - has been observed

SEASONAL STATUS

R - yearlong resident
S - summer resident
W - winter resident
M - migrant
* - nesting bird

INVERTEBRATES

Common Name	Scientific Name	Importance
Freshwater "scud" shrimp	*Hyalella azteca*	Fish & bird food
Mayflies	Order: Ephemeroptera	Fish & bird food
Dragonflies	Order: Anisoptera	Nymphs-fish & bird food
Damselflies	Order: Zygoptera	Nymphs-fish & bird food
Backswimmers	Family: Notohectidae	Fish & bird food
Water boatmen	Family: Corixidae	Fish & bird food
Mosquitoes	Family: Culicidae	Bird food, biting pests
Black flies	Family: Simulidae	Bird food, biting pests
Horse flies	Family: Tabanidae	Bird food, biting pests
Biting midges	Family: Ceratopogonidae	Bird food, biting pests
Ants	Family: Formicidae	Food chain, biting pests

VERTEBRATES

FISH

Common Name	Scientific Name	Abundance	Status
Rainbow trout	*Salmo gairdneri*	c+	R
Fathead minnow	*Pimephales promelas*	c+	R
Channel catfish	*Ictalurus melas*	u+	R

AMPHIBIANS

Common Name	Scientific Name	Abundance	Status
Tiger salamander	*Ambystoma tigrinium*	c+	R
Plains spadefoot	*Scaphiopus bombifrons*	u+	R
Western toad	*Bufo boreas*	c+	R
Leopard frog	*Rana pipiens*	c+	R

Common Name	Scientific Name	Abundance	Status
	REPTILES		
Eastern fence lizard	*Sceloporus undulatus*	u+	R
Short-horned lizard	*Phyrnosoma douglassi*	c+	R
Gopher snake	*Pituophis melanoleucas*	c+	R
Common garter snake	*Thamnophis sirtalis*	c+	R
	MAMMALS		
INSECT-EATERS	INSECTIVORA		
Shrews	Soricidae		
Merriam's shrew	*Sorex merriami*	r	R
Vagrant shrew	*Sorex vagrans*	u	R
BATS	CHIROPTERA		
Plainnose Bats	Vespertilionidae		
Little brown myotis	*Myotis lucifugus*	u+	S
Long-legged myotis	*Myotis volans*	r	S
Small-footed myotis	*Myotis subulatus*	r	S
Big brown bat	*Eptesicus fuscus*	u	S
Western big-eared bat	*Plecotus townsendi*	r	S
PIKAS, RABBITS & HARES	LAGOMORPHA		
Hares and Rabbits	Leporidae		
White-tailed jackrabbit	*Lepus townsendii*	c+	R
Black-tailed jackrabbit	*Lepus californicus*	c+	R
Desert cottontail	*Sylvilagus auduboni*	c+	R
RODENTS	RODENTIA		
Squirrels	Sciuridae		

Common Name	Scientific Name	Abundance	Status
Thirteen-lined ground squirrel	*Spermophilus tridecemlineatus*	u+	R
Least chipmunk	*Eutamias minimus*	c+	R
Pocket Gophers	Geomyidae		
Northern pocket gopher	*Thomomys talpoides*	u+	R
Pocket Mice and Kangaroo Rats	Heteromyidae		
Ord's kangaroo rat	*Dipodomys ordi*	c+	R
Silky pocket mouse	*Perognathus flavus*	u	R
Cricetid Rats and Mice	Cricetidae		
Plains harvest mouse	*Reithrodontomys montanus*	r	R
Western harvest mouse	*Reithrodontomys megalotis*	u	R
Deer mouse	*Peromyscus maniculatus*	c+	R
Northern grasshopper mouse	*Onychomys leucogaster*	u	R
Meadow vole	*Microtus pennsylvanicus*	c+	R
Long-tailed vole	*Microtus longicaudus*	u	R
Muskrat	*Ondatra zibethicus*	c+	R
Old World Rats and Mice	Muridae		
House mouse	*Mus musculus*	u+	R
Jumping Mice	Zapodidae		
Western jumping mouse	*Zapus princeps*	u	R
FLESH-EATERS	CARNIVORA		
Foxes and Coyotes	Canidae		
Coyote	*Canis latrans*	c+	R
Red fox	*Vulpes fulva*	r	R

Common Name	Scientific Name	Abundance	Status
Gray fox	Urocyon cinereoargenteus	u	R
Kit fox	Vulpes macrotis	r	R
Raccoons and Ringtails	Procyonidae		
Raccoon	Procyon lotor	u+	R
Weasels, Skunks, Badgers, etc.	Mustelidae		
Long-tailed weasel	Mustela frenata	u+	R
Mink	Mustela vison	r	R
Badger	Taxidea taxus	u+	R
Spotted skunk	Spilogale putorius	r	R
Striped skunk	Mephitis mephitis	u+	R
Cats	Felidae		
Bobcat	Lynx rufus	r	R
EVEN-TOED UNGULATES	ARTIODACTYLA		
Deer and Allies	Cervidae		
Mule deer	Odocoileus hemionus	r+	W
Elk	Cervus canadensis	r+	W
Pronghorn Antelope	Antilocapridae		
Pronghorn	Antilocapra americana	r+	R
LOONS	GAVIIFORMES		
Family: Gaviidae			
Common loon	Gavia immer	r	W
GREBES	PODICIPEDIFORMES		
Family: Podicipedidae			
Western grebe	Aechmophorous occidentalis	r	S*

Common Name	Scientific Name	Abundance	Status
Eared grebe	*Podiceps caspicus*	u+	S*
Pied-billed grebe	*Podilymbus podiceps*	u+	S*
PELICANS	PELICANIFORMES		
Family: Pelicanidae			
White pelican	*Pelecanus erythrorhynchos*	r	M
DUCKS AND GEESE	ANSERIFORMES		
Family: Anatidae			
Whistling swan	*Olor columbianus*	r	M
Canada goose	*Branta canadensis*	c+	R*
White-fronted goose	*Anser albifrons*	r	M
Snow goose	*Chen hyperborea*	r	M
Ross' goose	*Chen rossi*	r	M
Mallard	*Anas platyrhynchos*	c+	R*
Pintail	*Anas acuta*	c+	R*
Gadwall	*Anas strepera*	c+	R*
Blue-winged teal	*Anas discors*	c+	S*
Green-winged teal	*Anas carolinensis*	c+	R*
Cinnamon teal	*Anas cyanoptera*	c+	S*
American wigeon	*Mareca americana*	u+	S*
Northern shoveler	*Spatula clypeata*	c+	S*
Wood duck	*Aix sponsa*	r+	M
Redhead	*Aythya americana*	u+	S*
Canvasback	*Aythya valisineria*	r+	M
Ring-necked duck	*Aythya collaris*	r+	M
Greater scaup	*Aythya marila*	r	M

Common Name	Scientific Name	Abundance	Status
Lesser scaup	*Aythya affinis*	u+	M
Common goldeneye	*Bucephala clangula*	r+	M
Bufflehead	*Bucephala albeola*	u+	M
Ruddy duck	*Oxyura jamaicensis*	u+	S*
Common merganser	*Mergus merganser*	u+	M
Red-breasted merganser	*Mergus serrator*	r	M
Hooded merganser	*Lopholytes eucullatus*	r+	M
EAGLES, HAWKS, FALCONS, and VULTURES	FALCONIFORMES		
Family: *Cathartidae*			
Turkey vulture	*Cathartes aura*	u	S
Family: *Accipitridae*			
Cooper's hawk	*Accipter cooperii*	r	M
Marsh hawk	*Circus cyaneus*	c+	R*
Rough-legged hawk	*Buteo lagopus*	c+	W
Ferruginous hawk	*Buteo regalis*	r+	R*
Red-tailed hawk	*Buteo jamaicensis*	u+	R
Swainson's hawk	*Buteo swainsoni*	c+	S*
Golden eagle	*Aquila chrysaetos*	c+	R
Bald eagle	*Haliaeetus leucocephalus*	u+	W
Family: *Falconidae*			
Peregrine falcon	*Falco peregrinus***	r+	R
Prairie falcon	*Falco mexicanus*	u+	R
Merlin (pigeon hawk)	*Falco columbarius*	r	M
American kestrel (sparrow hawk)	*Falco sparverius*	u+	R

** Endangered Species--No recent nesting records on NRL

Common Name	Scientific Name	Abundance	Status
GALLINACEOUS BIRDS	GALLIFORMES		
Family: Phasianidae			
Ring-necked pheasant	*Phasianus colchicus*	r+	R*
HERONS, BITTERNS and ALLIES	CICONIIFORMES		
Family: Ardeidae			
Great egret	*Casmerodious albus*	r	M
Snowy egret	*Leucophoyx thula*	c+	S*
Great blue heron	*Ardea herodias*	u+	S
Black-crowned night heron	*Nycticorax nycticorax*	c+	S*
American bittern	*Botaurus lentiginosus*	u+	S*
Least bittern	*Ixobrychus exilis*	r	S
Family: Threskiornithidae			
White-faced ibis	*Pelgadis chihi*	u+	S*
CRANES, RAILS and ALLIES	GRUIFORMES		
Family: Gruidae - Cranes			
Sandhill crane	*Grus canadensis*	c+	M
Whooping crane	*Grus americana*	r**	M
Family: Rallidae			
Virginia rail	*Rallus limicola*	u	S*
Sora	*Porzana carolina*	u+	S*
American coot	*Fulica americana*	c+	S*

** Endangered Species--No recent records on NRL

Common Name	Scientific Name	Abundance	Status
SHOREBIRDS and GULLS	CHARADRIFORMES		
Family: Recurviorstridae	Avocets and Stilts		
American avocet	Recurvirostra americana	a+	S*
Black-necked stilt	Himantopus himantopus	r	M
Family: Charadriidae	Plovers		
Mountain plover	Eupoda montanus	r	S*
Black-bellied plover	Squatarola squatarola	r	M
Killdeer	Charadrius vociferus	c+	R*
Snowy plover	Charadrius alexandrinus	u+	S*
Family: Scolopacidae			
Long-billed curlew	Numenius americanus	r+	M
Marbled godwit	Limosa fedoa	u+	M
Solitary sandpiper	Tringa solitario	u+	M
Spotted sandpiper	Actitis macularia	c+	S*
Willet	Catoptrophorus semipalmatus	u+	M
Greater yellowlegs	Totanus melanoleucas	c+	M
Lesser yellowlegs	Totanus flavipes	u+	M
Long-billed dowitcher	Limnodromus scolopaceus	u+	M
Baird's sandpiper	Erolia bairdii	u+	M
Least sandpiper	Erolia minutilla	c+	M
Western sandpiper	Ereunetes mauri	c+	M
Common snipe	Capella gallinago	u+	R*
Family: Phalaropidae			
Wilson's phalarope	Steganopus tricolor	c+	S*

Common Name	Scientific Name	Abundance	Status
Northern phalarope	Lobipes lobatus	r	M
Family: Laridae			
Ring-billed gull	Larus delawarensis	u+	M
Franklin's gull	Larus pipixcan	u+	M
Least tern	Sterna albifrons	r	M
Common tern	Sterna hirundo	r	M
Forster's tern	Sterna forsteri	r+	M
Caspian tern	Hydroprogne caspia	r	M
Black tern	Childonias nigra	u+	M
PIGEONS and DOVES	COLUMBIFORMES		
Family: Columbidae			
Rock dove	Columba livia	c+	R*
Mourning dove	Zenaidura macroura	c+	R*
CUCKOOS and ROADRUNNERS			
Family: Cuculidae			
Roadrunner	Geococcyx californianus	r	R
OWLS	STRIGIFORMES		
Family: Tytonidae			
Barn owl	Tyto alba	r	R
Family: Strigidae			
Great horned owl	Bubo virginianus	c+	R*
Long-eared owl	Asio otus	u	R*
Short-eared owl	Asio flammeus	u+	R*
Burrowing owl	Speotyto cunicularia	u+	S*

Common Name	Scientific Name	Abundance	Status
NIGHTHAWKS and POOR-WILLS	CAPRIMULGIFORMES		
Family: *Caprimulgidae*			
Poor-will	*Phalaenoptilus nuttalli*	u	M
Common nighthawk	*Cordeiles minor*	c+	S*
HUMMINGBIRDS and SWIFTS	APODIFORMES		
Family: *Apodidae*			
White-throated swift	*Aeronautes saxatalis*	r	M
Family: *Trochilidae*			
Broad-tailed hummingbird	*Selasphorus platycercus*	r	M
Rufous hummingbird	*Selasphorus rufus*	r	M
KINGFISHERS	CORACIIFORMES		
Family: *Alcedinidae*			
Belted kingfisher	*Megaceryle alcyon*	u	M
WOODPECKERS	PICIFORMES		
Family: *Picidae*			
Common flicker	*Colaptes sp.*	u+	M
PERCHING BIRDS	PASSERIFORMES		
Family: *Tyrannidae*			
Eastern kingbird	*Tyrannus tyrannus*	r+	M
Western kingbird	*Tyrannus verticalis*	u+	S*
Say's phoebe	*Sayornis saya*	c+	S*
Traill's flycatcher	*Empidonax traillii*	r	M
Western flycatcher	*Empidonax difficilis*	u+	M
Western wood pewee	*Contopus sordidulus*	u+	M

Common Name	Scientific Name	Abundance	Status
Olive-sided flycatcher	*Nuttallornis borealis*	r	M
Family: Alaudidae			
Horned lark	*Eremophila alpestris*	a+	R*
Family: Hirundinidae			
Barn swallow	*Hirundo rustica*	c+	S*
Cliff swallow	*Petrocheiidon pyrrhonota*	c+	S
Violet-green swallow	*Tachycineta thalassina*	c+	S*
Tree swallow	*Iridoprocne bicolor*	c+	S*
Bank Swallow	*Riparia riparia*	u+	S*
Rough-winged swallow	*Stelgidopteryx ruficollis*	u+	S*
Purple martin	*Progne subis*	r	M
Family: Corvidae			
Black-billed magpie	*Pica pica*	c+	R*
Common raven	*Corvus corax*	u+	R
Common crow	*Corvus brachyrhynochos*	u+	R
Family: Paradae			
Black-capped chickadee	*Parus atricapillus*	u+	W
Plain titmouse	*Parus inornatus*	r	W
Family: Troglodytidae			
House wren	*Troglodytes aedon*	u+	S*
Rock wren	*Salpinctes obsoletus*	u+	M
Long-billed marsh wren	*Telmatodytes plaustris*	c+	R*
Short-billed marsh wren	*Cistothorus plantensis*	r	M

Common Name	Scientific Name	Abundance	Status
Family: Mimidae			
Mockingbird	Mimus polyglottos	u+	S*
Sage thrasher	Oreoscoptes montanus	c+	S*
Family: Turdidae			
American robin	Turdus migratorius	u+	M
Townsend's solitaire	Myadestes townsendi	r	M
Veery	Hylochichla fuscescens	r	M
Western bluebird	Sialia mexicana	u+	M
Mountain bluebird	Sialia currucoides	u+	M
Family: Sylviidae			
Blue-gray gnatcatcher	Polioptila caerulea	r	M
Family: Motacillidae			
Water pipit	Anthus spinoletta	r+	M
Family: Laniidae			
Northern shrike	Lanius excubitor	u+	W
Loggerhead shrike	Lanius ludovicianus	c+	S*
Family: Sturnidae			
Starling	Sturnus vulgaris	u+	R*
Family: Vireonidae			
Warbling vireo	Vireo gilvus	u	M
Family: Parulidae			
Orange-crowned warbler	Vermivora celata	r	M
Virginia's warbler	Vermivora virginiae	r	M
Yellow warbler	Dendroica petechia	u+	M
Yellow-rumped warbler (Audubon's)	Dendroica sp.	u+	M

Common Name	Scientific Name	Abundance	Status
Common yellow throat	Geothlypis trichas	u+	S*
Yellow-breasted chat	Icteria virens	r	M
Northern waterthrush	Seiurus noveboracensis	r	M
McGillivray's warbler	Oporornis tolmiei	r	M
Wilson's warbler	Wilsonia pusilla	r	M
American redstart	Setophaga ruticilla	r	M
Family: Ploceidae			
House sparrow	Passer domesticus	c+	R*
Family: Icteridae			
Bobolink	Dolichonyx oryzivorus	r	S*
Western meadowlark	Sturnella neglecta	c+	R*
Yellow-headed blackbird	Xanthocephalus xanthocephalus	c+	S*
Red-winged blackbird	Agelaius phoeniceus	c+	R*
Brewer's blackbird	Euphagus cyanocephalus	c+	S*
Brown-headed cowbird	Molothrus ater	u+	S*
Common grackle	Quiscalus quiscula	r	S*
Family: Fringillidae			
Black-headed grosbeak	Pheucticus melanocephalus	r	M
Blue grosbeak	Guiraca caerulea	r	M
Cassin's finch	Carpodacus cassinii	r	W
House finch	Carpodacus mexicanus	c+	W
Gray-crowned rosy finch	Leucosticte tephrocotis	r	W
Brown-capped rosy finch	Leucosticte australis	r+	W
Pine siskin	Spinus pinus	u+	W

Common Name	Scientific Name	Abundance	Status
American goldfinch	Spinus tristis	u+	R
Green-tailed towhee	Chlorura chlorura	c+	R*
Rufous-sided towhee	Pipilo erythrophthalmus	u+	R*
Savannah sparrow	Passerculus sandwichensis	u+	S*
Grasshopper sparrow	Ammodramus savannarum	r	S*
Baird's sparrow	Ammodramus bairdii	r	S*
Lark bunting	Calamospiza melanocorys	u+	S*
Vesper sparrow	Pooecetes gramineus	c+	S*
Lark sparrow	Chondestes grammacus	u+	S*
Black-throated sparrow	Amphispiza bilineata	r	M
Sage sparrow	Amphispiza belli	c+	S*
Cassin's sparrow	Aimophila cassinii	r	M
Dark-eyed junco	Junco sp.	c+	W
Gray-headed junco	Junco caniceps	c+	W
Tree sparrow	Spizella arborea	u+	W
Chipping sparrow	Spizella passerina	c+	M
Brewer's sparrow	Spizella breweri	c+	S*
White-crowned sparrow	Zonotrichia leucophrys	u+	W
Lincoln's sparrow	Melospiza lincolnii	r	M
Swamp sparrow	Melospiza georgiana	r	M
Song sparrow	Melospiza melodia	c+	R*
Lapland longspur	Calcarius lapponicus	r	W

Common Name	Scientific Name	Abundance	Status
	Accidental Visitors		
Double-crested cormorant	*Phalacocorax auritus*		
Mexican duck	*Anas diazi*		
White-winged scoter	*Melanitta deglandi*		
American woodcock	*Philohela minor*		
Dunlin	*Erolia alpina*		

APPENDIX B

Public Notice of Closure

and

Checklist of Wildlife Handout

PUBLIC NOTICES

Notice of Temporary Annual Closure of Natural Resource Lands

Notice is hereby given in accordance with Title 43CFR6250.0-6b that the following described lands under the administration of the Bureau of Land Management, located within Alamosa County, Colorado, are temporarily closed annually to all public use during the period March 15 through June 30. This area is also closed to fishing during the same period annually in accordance with Colorado Fishing Regulations published by the Colorado Division of Wildlife.

The legal description of these lands is as follows:

T.38N., R.11E., New Mexico Principal Meridian, Alamosa County

Section 1, All
Section 2, N½, SE¼
Section 12, All
Section 13, N½, SE¼, N½SW¼
Section 24, NE¼

T.38N., R.12E., New Mexico Principal Meridian, Alamosa County

Section 5, All
Section 6, All
Section 7, N½, SE¼, N½SW¼, SW¼SW¼
Section 8, All
Section 9, W½

Containing 5,390 acres.

These lands are located approximately 10 miles northeast of Alamosa, Colorado, within an area known locally as the Dry Lakes. The area has been designated the "Blanca Wildlife Habitat Area" by the Bureau of Land Management.

These lands are being developed for waterfowl habitat, and numerous ducks and geese are attracted for nesting and rearing of young. Public use of this area during the waterfowl nesting season is causing harassment of waterfowl which are attempting to nest. This causes many of them to leave the area or abandon their nests. Continued public use of the area during the nesting season will greatly diminish its waterfowl production potential.

Signs will be posted to identify the exterior boundaries of the closed area. Maps showing the closed area are posted in the Post Office and Alamosa County Courthouse in Alamosa, Colorado; and in the San Luis Resource Area Office of the Bureau of Land Management located at 1921 State Street, Alamosa, Colorado 81101.

This closure is in accordance with a Management Framework Plan decision which was participated in by the public. The cooperation and assistance of the public will be appreciated during this annual closure to protect waterfowl using the area.

BLANCA WILDLIFE HABITAT AREA

Purpose: Convert a 5,390 acre dry desert lakebed environment into a productive wildlife habitat primarily for waterfowl and provide for increased wildlife orientated recreation.

Rationale: In historic times (pre 1900) the San Luis Valley was described as the southern most major waterfowl production area in the central flyway. Post 1900 land use practices have significantly decreased productive habitat primarily through agriculture and a decrease in water table levels. The specific area of development was historically described as a wetlands area. The original marsh was estimated at 15-20,000 acres.

Present Status:
29 artesian wells (2350 gpm)
12,000 acreas of wetlands
4 research fisheries (all cold)
7 warm water fisheries
10 cold water fisheries
4 combined cold & warm

Proposed Development:
40 artesian wells
26 fish ponds
2050 acres of wetlands

Present Studies:
Waterfowl Census & Production
Fisheries Investigations
Water Chemistry
Vegetation Trends
Visitor Use

Statistics:

	1972	1982
Peak Duck Population	250	4000
Goose Production (Goslings)	3	280
Duck Production	30	1000
Fish Stocking	200	35,800

Management Practices:

Waterfowl Propagation
1. Island Development
2. Nesting Structures
3. Water Management Facilities
4. Closure

Non-Game & Endangered Species
1. Bird Boxes
2. Tree Planting

Management
Practices (cont'd)

Fisheries Propagation
1. Fish Ponds
   a. Warm Water
   b. Cold Water
2. Aquatic Weed Control

Visitor Use
1. Restrictive Transporatation System
2. Signs
3. Visitor Map
4. SLUP's (Retriever Trials)

Livestock Grazing
1. Rotation System

BLANCA WILDLIFE HABITAT AREA WATERS

FILED IN DISTRICT COURT 12/14/81 WATER DIVISION 3 COLORADO

Direct Flow (absolute)	2965 gpm	(4773.65 AF)
Conditional	855 gpm	(1376.55 AF)
	3820 gpm	(6150.20 AF)

Closed Basin Mitigation (1978)	1107.00 AF

Providing passage of a congressional bill presently in Energy & Resources Committee. (The water will total 307 AF artesian in 1984 and 800 ditch/Yr) in 1987.

Mitigation also includes 320 acres of additional land, $90,000 (81) drilling costs and $115,000 (81) dike and water conveyance structures.

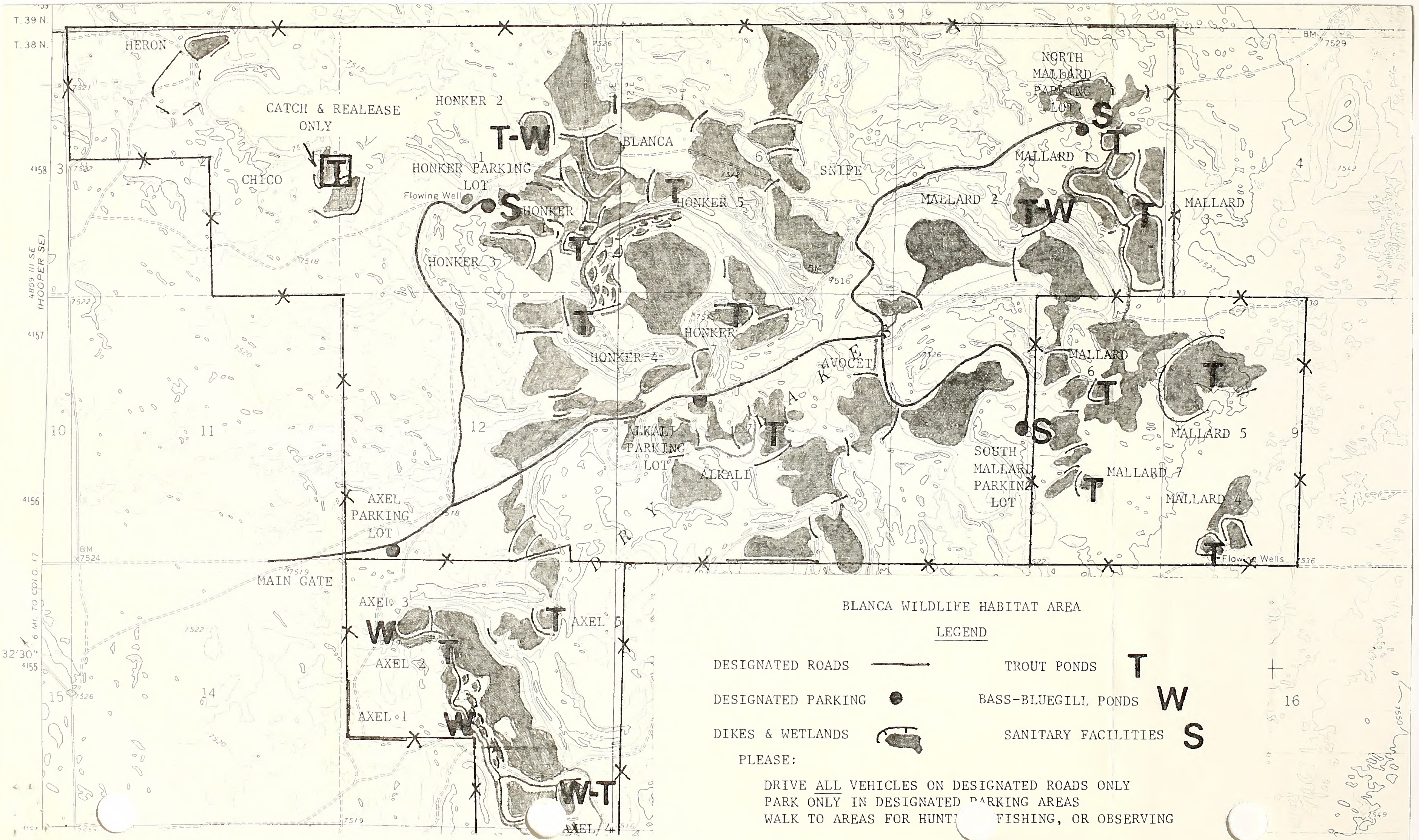
Total Potential Water	7257.20 AF
Total Potential Wetlands	2420 Acres

MAINTENANCE & DEVELOPMENT FY 84-88

(FY 82 COSTS) ($2700/MM)

Wildlife Biologist		
Studies	2MM	
Gen Management	2MM	$16,200
Design & Evalutation	2MM	
Maintenance Man	5MM	13,500
Administration	1MM	2,700
Well Maint. (2 replacement wells)		30,000
Well Maint. (4 wash, screen)		10,800
Gen. Dike Maint. (Equip Rental)		3,000
Procurement Gen. Maint.		2,000
		$78,200/Yr.

These figures based on having our own drill rig. Bureau of Reclamation has programmed 2, 6", 600 ft. deep artesian wells at $90,000 under contract for the Area.



BLANCA WILDLIFE HABITAT AREA

LEGEND

DESIGNATED ROADS ——
DESIGNATED PARKING ●
DIKES & WETLANDS
TROUT PONDS **T**
BASS-BLUEGILL PONDS **W**
SANITARY FACILITIES **S**

PLEASE:

DRIVE ALL VEHICLES ON DESIGNATED ROADS ONLY
PARK ONLY IN DESIGNATED PARKING AREAS
WALK TO AREAS FOR HUNTING, FISHING, OR OBSERVING

ER'S CARD

DATE RETURNED

OFFICE

(Continued on reverse)

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